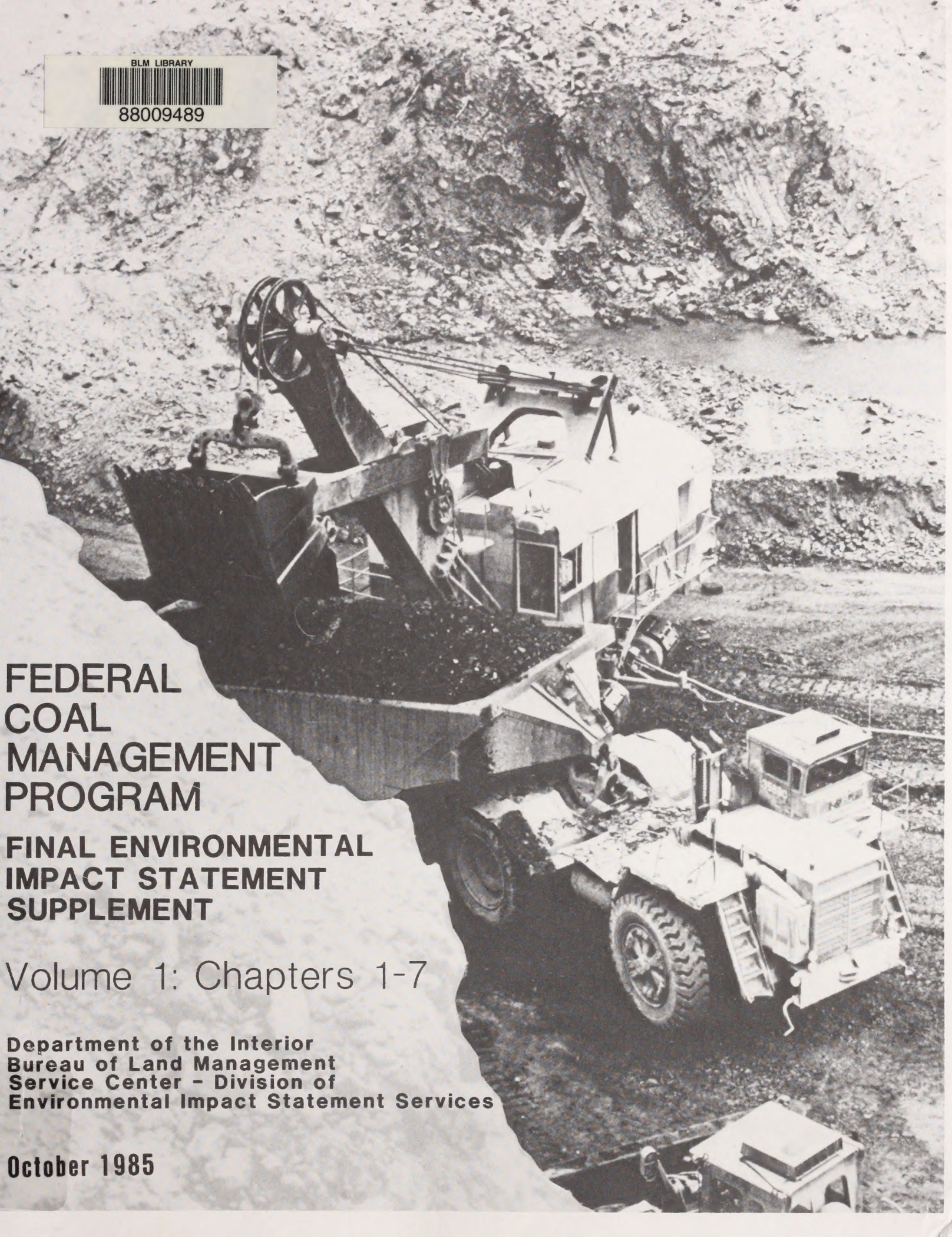


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FEDERAL COAL MANAGEMENT PROGRAM

FINAL ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENT

Volume 1: Chapters 1-7

**Department of the Interior
Bureau of Land Management
Service Center - Division of
Environmental Impact Statement Services**

October 1985



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

October 4, 1985

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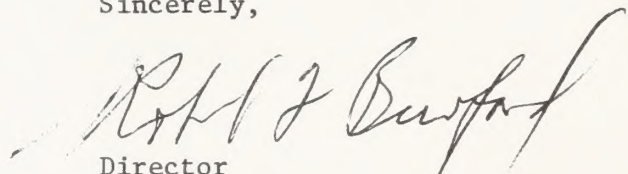
The final Environmental Impact Statement (EIS) supplementing the 1979 Final Environmental Statement for the Federal Coal Management Program is submitted for your information. The final EIS is a complete revision and reprinting of the draft, which was published on February 8, 1985, and incorporates many changes and corrections that resulted from comments on the draft. Chapter 7, Consultation and Coordination, incorporates copies of comments received during the comment period, public hearing comments, and responses to all substantive comments.

The Bureau of Land Management would like to take this opportunity to thank the individuals and organizations who provided suggestions and comments on the draft EIS. Their help has been invaluable in preparing this final document.

Copies of this final supplemental EIS may be obtained upon request to Andrew Strasfogel, Project Coordinator, Bureau of Land Management, 18th and C Streets, N.W., Washington, D.C. 20240.

As required by Council on Environmental Quality regulations, no decision on the Federal Coal Management Program can be made for at least 30 days after the Environmental Protection Agency Notice of Availability has appeared in the Federal Register. Also, a Notice of Availability of a Record of Decision will be published in the Federal Register.

Sincerely,



Director

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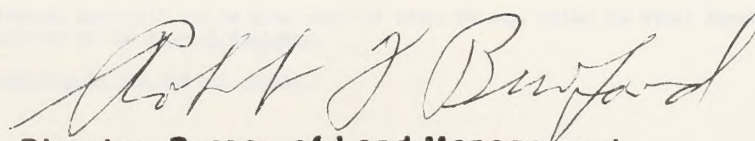
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FEDERAL COAL MANAGEMENT PROGRAM

Prepared by

BUREAU OF LAND MANAGEMENT

October 1985


Director, Bureau of Land Management

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Final Environmental Impact
Statement Supplement

for the

FEDERAL COAL MANAGEMENT PROGRAM

Prepared by

BUREAU OF LAND MANAGEMENT

October 1980

Revised, Bureau of Land Management

Federal Coal Management Program
Supplemental Environmental Impact Statement

() Draft

(X) Final

Lead Agency

U.S. Department of the Interior, Bureau of Land Management

Cooperating Agencies

U.S. Department of Agriculture, Forest Service

Counties That Could be Directly Affected

FORT UNION COAL REGION

Montana Carter, Custer, Daniels, Dawson, Fallon, Garfield, McCone, Prairie, Richland, Roosevelt, Sheridan, Valley, Wibaux
North Dakota Adams, Billings, Bowman, Burke, Burleigh, Divide, Dunn, Golden Valley, Grant, Hettinger, McHenry, McKenzie, McLean, Mercer, Morton, Mountrail, Oliver, Renville, Sheridan, Slope, Stark, Ward, Will

POWDER RIVER COAL REGION

Montana Big Horn, Golden Valley, Musselshell, Powder River, Rosebud, Treasure, Yellowstone
Wyoming Big Horn, Campbell, Converse, Crook, Goshen, Johnson, Natrona, Niobrara, Sheridan, Weston

GREEN RIVER-HAMS FORK COAL REGION

Colorado Grand, Jackson, Moffat, Rio Blanco, Routt
Wyoming Albany, Carbon, Lincoln, Sublette, Sweetwater, Uinta

UINTA-SOUTHWESTERN UTAH COAL REGION

Colorado Delta, Garfield, Gunnison, Mesa, Montrose, Ouray, Pitkin, San Miguel
Utah Carbon, Daggett, Duchesne, Emery, Garfield, Grand, Iron, Kane, Morgan, San Juan, Sanpete, Sevier, Summit, Uintah, Utah, Wasatch, Washington, Wayne

SAN JUAN RIVER COAL REGION

Colorado Archuleta, Dolores, La Plata, Montezuma, San Juan
New Mexico Bernalillo, Catron, Cibola, Lincoln, Los Alamos, McKinley, Rio Arriba, Sandoval, San Juan, Santa Socorro, Valencia

SOUTHERN APPALACHIAN COAL REGION, ALABAMA SUBREGION

Alabama Fayette, Tuscaloosa, Walker

Abstract

This supplemental environmental impact statement (EIS) assesses the environmental consequences of continuing the federal coal management program as modified and three alternatives to this existing program: No New Federal Lease Preference Right and Emergency Leasing, and Leasing by Application.

The analysis focuses in particular on six federal coal regions: Fort Union (Montana, North Dakota); Powder River (Montana, Wyoming); Green River-Hams Fork (Colorado, Wyoming); Uinta-Southwestern Utah (Colorado, Utah); San Juan River (Colorado, New Mexico); and the Southern Appalachian, Alabama Subregion (Alabama).

This EIS supplements the 1979 Federal Coal Management Program Final Environmental Statement (1979 FES). It analyzes the conditions that formed the basis for the 1979 analysis and that may have changed during the past 6 years. The analysis is conducted in the context of the 1979 federal coal management program, which has evolved over the years and continues to evolve.

This document analyzes the impacts of high, medium, and low levels of coal production associated with federal lease measures against the same levels of coal production associated with No New Federal Leasing in 1990, 1995, and 2000 in each region.

On the basis of the issues and concerns identified during scoping, this supplemental EIS focuses on the following categories of potential impacts: socioeconomics, transportation, health and safety, Native American issues, air resources, soils and vegetation, agriculture, wildlife, visual resources, recreation resources, wilderness, cultural resources, mineral and paleontological resources, and water resources.

Copies of this Final supplemental EIS can be obtained from

Andrew L. Strasfogel, Project Coordinator
 U.S. Department of the Interior
 Bureau of Land Management
 Office of the Assistant Director for Solid Leasable Minerals
 18th and C Streets, NW
 Washington, D.C. 20240

Decision Process

Decisions on the leasing of federal coal will not be made until at least 30 days after the Final Supplemental EIS Notice of Availability has appeared in the Federal Register.

Date Supplemental EIS Made Available To EPA and the Public

Draft: February 8, 1985
 Final: October 4, 1985

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PREFACE

The purpose of this supplemental environmental impact statement (EIS) is to analyze the potential environmental consequences of continuing the federal coal management program or of implementing three alternatives to it. This document has been prepared to supplement the 1979 Federal Coal Management Program Final Environmental Statement (1979 FES) (BLM 1979a) because many changes have occurred or are proposed in the coal program and because of changes in energy market conditions that formed the basis for the 1979 analysis.

This supplement contains 7 chapters and 10 appendixes.

- Chapter 1, the introduction, discusses relationships between this supplemental EIS and the 1979 FES, the history and background of the federal coal leasing program, and major federal and state laws mitigating coal-related impacts.
- Chapter 2 discusses the purpose of and need for the Proposed Action and describes the Proposed Action and three alternatives: No New Federal Leasing, Preference Right and Emergency Leasing, and Leasing by Application.
- Chapter 3 presents coal production forecasts for the United States and the six federal coal production regions under study and discusses the assumptions upon which the forecasts are based.
- Chapter 4 describes the affected environment and documents the impact analysis for the Proposed Action and alternatives.
- Chapter 5 presents a comparative analysis of impacts of the Proposed Action and alternatives.
- Chapter 6 discusses the trade-offs and irreversible and irretrievable commitments of resources resulting from implementing the Proposed Action or alternatives.
- Chapter 7 discusses consultation and coordination involved in preparing this supplemental EIS and presents written and oral comments on the draft supplemental EIS and responses to these comments.

The 10 appendixes provide background information, including data and methodologies used to conduct the analysis documented in the text. Appendix 1 presents A Review of the Unsuitability Criteria in Federal Coal Leasing and response to comments on this review. Appendix 2 presents the Federal-State coal Advisory Board Charter. Appendix 3 includes materials relating to coordination under Section 7 of the Endangered Species Act. Appendix 4 explains methodologies used in the impact analysis of Chapters 4, 5, and 6. Appendix 5 discusses reclamation and erosion control on surface-mined land. Appendix 6 presents an analysis of coal program changes. Appendix 7 includes BLM's Guide to Coal Program Appraisal, comments on this guide, and responses to these comments. Appendix 8 presents technical details relating to the coal production forecasts of Chapter 3. Appendix 9 presents BLM's Fee Exchange Policy for Leasable and Salable Minerals. Finally, Appendix 10 includes the environmental assessments for coal program regulations proposed by the Department of the Interior in response to reports by the Linowes Commission (Linowes and others 1984) and the U.S. Congress, Office of Technology Assessment (OTA 1984).

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SUMMARY



Under the Mineral Leasing Act of 1920 as amended, the Department of the Interior has responsibility for leasing federal coal lands. Until 1960, little demand existed for federal coal, and little leasing occurred. In the 1960s, leasing greatly increased. In 1971, the Department imposed a moratorium on coal leasing in response to public concerns that the lands were being leased mainly for speculation rather than development. The moratorium was lifted in July 1979, when the Department issued regulations implementing the Federal Coal Leasing Amendments Act of 1976 (FCLAA).

Before issuing its coal leasing regulations, the Department prepared a final environmental statement for its federal coal management program (BLM 1979a) (1979 FES), which was released in April 1979. This 1979 FES listed three issues that justified the need for a program to manage federal coal: (1) the need to address the Nation's serious energy problem, (2) the need to reduce the Federal Government's historically passive role in coal leasing decisions, and (3) the need to respond to critical review of coal management by the executive, legislative, and judicial branches of the Federal Government.

In the 6 years since the 1979 FES was published, many changes have been made to or proposed for the federal coal management program, and a supplemental EIS is needed because economic and environmental conditions have changed.

LOCATION OF COAL REGIONS

The 1979 FES used 12 federal coal production regions (Map 1-1) as basic units for analysis. These regions were delineated by similar geology and coal characteristics and with reference to markets for coal reserves developed within the regions. These same 12 regions, which have over 92 percent of the total coal reserves of the 48 conterminous states and account for over 97 percent of the Nation's 1976 federal coal production, are the basis for analysis in this supplemental EIS.

Of the 12 coal production regions analyzed in the 1979 FES, 6 regions and 2 subregions have federally owned coal of major importance. Regional coal teams, however, found a lack of interest in federal coal leasing in the Denver-Raton Mesa Region and the Oklahoma Subregion, and thus this supplemental EIS emphasizes the following five regions and one subregion (Map 1-2) (Bureau of Mines 1976):

Fort Union Region--23,101 million tons of reserve base in 13 eastern Montana and 23 western North Dakota counties,

Powder River Region--142,524 million tons of reserve base in 10 northeast Wyoming and 7 southeast Montana counties,

Green River-Hams Fork Region--15,543 million tons of reserve base in five northwest Colorado and six southern Wyoming counties,

Uinta-Southwestern Utah Region--7,177 million tons of reserve base in 8 western Colorado and 18 eastern and southern Utah counties,

SUMMARY

San Juan River Region--4,164 million tons of reserve base in 12 northwest New Mexico and 5 southwest Colorado counties,

Alabama Subregion of the Southern Appalachian Region--2,213 million tons of reserve base in three west-central Alabama counties.

MAJOR ISSUES

Five major issues emerged from the Department of the Interior's analysis of public comments on the scope of the supplemental EIS. These issues and the Department's response in this supplemental EIS are outlined in the Decision on the Scope of the Supplement to the 1979 Federal Coal Management Program FES (Appendix 6 of the draft supplemental EIS) and are summarized below.

- Relationship of the supplemental EIS to ongoing changes in the coal program. The supplemental EIS is being proposed to assess the impacts of the federal coal leasing program and will include impacts of all changes proposed for adoption as a result of program reviews. All proposed changes are described in Chapter 2. Those that were published for public comment are consolidated in Appendix 6. Environmental assessments on certain proposals and findings of no significant impacts to the human environment were completed (Appendix 10).
- Scope of market analysis. To underscore the importance of supply and demand analysis, coal production forecasts are highlighted in Chapter 3 of the supplemental EIS and are supported by a separate report in Appendix 8, which is a revision of the Coal Production Forecast Technical Report (BLM 1985b).
- Assessment of reclamation success on surface mined western coal lands. A technical appendix (Appendix 5) on reclamation and erosion control on surface mined lands was developed for the supplemental EIS to present current results based on research and experience from existing mines.
- Impacts of the Department of the Interior's policy to carry out coal exchanges. The explanation in the major program events section of Chapter 1 addresses this topic. Details of fee coal policy for leasable and salable minerals are given in Appendix 9.
- Need to analyze a full range of alternatives in the supplemental EIS. The alternatives analyzed are described in Chapter 2. Other alternatives considered and the rationale for not including them in the supplemental EIS are also discussed in Chapter 2.

PROPOSED ACTION AND ALTERNATIVES

The 1979 FES (BLM 1979a) analyzed seven major alternative coal programs, not all of which are now feasible or reasonable alternatives to the existing program. This supplemental EIS analyzes the Proposed Action to continue the federal coal management program and three alternatives: (1) Leasing by Application, (2) Preference Right and Emergency Leasing, and (3) No New Federal Leasing--the no-action alternative. These alternatives differ in the level of involvement of federal and state agencies and the public and, in most cases, the amount of federal coal that would be considered for leasing.

SUMMARY

For each alternative, this supplemental EIS analyzes impacts at three coal production levels--low, medium, and high--and for three target years--1990, 1995, and 2000.

The Proposed Action would continue the federal coal management program and would include the following major elements presented in the 1979 FES: planning systems, market analysis, sales procedures, enforcement of lease terms and conditions, management of existing leases, preference right lease application (PRLA) processing, use of regional coal teams, integration of National Environmental Policy Act (NEPA) procedures, and emergency sales procedures. In addition, the Proposed Action would incorporate revisions to the program made in 1982 and 1983 and changes proposed in 1984 and 1985. See the description of the Proposed Action in Chapter 2 for a detailed discussion of these revisions and proposed changes and how they differ from the 1979 Preferred Program.

Under the Leasing by Application Alternative, the Department of the Interior would consider offering federal coal for lease sale only in response to an application for a specific amount of coal in a specific location. All federal coal would be offered through competitive sales, but regional activity planning would not be part of this program. Although no long-range market analyses would be conducted, regional coal teams could be retained to carry out consultation with states and to review market conditions before lease sale decisions.

Under the Preference Right and Emergency Leasing Alternative, federal coal leasing would be limited (1) to coal deposits needed to meet emergency situations or (2) to coal deposits applied for in preference right lease applications (PRLAs) filed before 1976. Activity planning and market analyses would not be included in this program alternative.

Under the No New Federal Leasing Alternative--the no-action alternative--no program would be in place to analyze the need for leasing or to respond to lease applications. No federal coal would be offered at competitive lease sales or leased through approval of PRLAs, and the supply of federal coal would be limited to that already under lease. The Department of the Interior could either request that Congress provide relief to preference right lease applicants to eliminate the need to further process outstanding PRLAs or indefinitely postpone this processing. BLM coal program activities would be limited to the supervision of terms and conditions of existing leases.

The Department of the Interior believes that the Proposed Action is the best alternative for the following reasons.

- U.S. coal production levels through the year 2000 are likely to be unaffected by the leasing program chosen.
- If the No New Federal Leasing Alternative is chosen, sites for the additional coal production capacity required by increased demand will be selected from a smaller proportion of the total western U.S. resource base than under the Proposed Action. For example, only 20-30 percent of western coal reserves are privately controlled and could be developed.
- If the Proposed Action is selected, more environmentally acceptable sites could be considered for development than under the other alternatives.

SUMMARY

- Because some of these additional sites that could be developed under the Proposed Action would be less expensive to develop and would present fewer environmental concerns than private sites or older federal leases that could be developed under No New Federal Leasing, the Proposed Action is both economically and environmentally better than the other alternatives.

Out of necessity, much of the impact analysis in this supplemental EIS is general. Because specific coal tracts to be leased have not yet been selected, site-specific analysis cannot yet be conducted. Such analysis will be made in regional coal EISs if the preferred alternative is implemented before any competitive leasing.

The impacts of any of the alternatives would be related to the amount of coal production and would result either directly or indirectly from the following factors, all of which would increase with increased coal mining: (1) land disturbed during mining, (2) workers needed to mine and process the coal, (3) water needed to process the coal, (4) safety and health hazards of mining and processing coal, (5) particulates (dust) stirred up by coal operations, and (5) transportation capacity needed to haul coal from the mine. Although coal production would be about the same under different alternatives, the impacts might not necessarily be the same because of (1) the need to develop coal reserves as reserves are mined, (2) the substitution of less expensive coal for more expensive coal, and (3) the substitution of more environmentally acceptable coal for coal with higher environmental costs.

In the supplemental EIS, No New Federal Leasing is used as the baseline against which all impacts of the other alternatives are compared. Although under the action alternatives, coal production would exceed production under No New Federal Leasing in all regions except the Fort Union and San Juan River regions and the Alabama Subregion at certain levels and in certain years, the impacts of different alternatives would be similar for many resources or conditions. Coal production under Leasing by Application would be the same as under the Proposed Action, and thus the two alternatives are assumed to have similar impacts.

COMPARISONS WITH THE 1979 PREFERRED PROGRAM

The main thrust of this summary is to present a general comparison of impacts projected for the 1979 FES (BLM 1979a) Preferred Program at the 1990 medium production level and impacts projected for this supplemental EIS (1985) Proposed Action at the 1990 medium production level. The major factor influencing these differences is the substantially reduced coal production estimates in 1985 (see Figure 3-1). Differences can also be attributed to the different scope of the 1985 analysis (not including powerplant coal use) and differences in loading factors or multipliers used for impact assessment. The following sections quantitatively or qualitatively compare impacts projected in 1979 to those projected in 1985 for the six coal regions combined by the resources discussed in this supplemental EIS. Because the 1979 FES did not discuss visual resources and only briefly discussed Native American issues, their projected impacts cannot be compared between 1979 and 1985.

SUMMARY

SOCIOECONOMICS

Impacts to employment, population, and royalty and severance tax revenues in 1990 at the medium production level under the 1985 Proposed Action would be about 80 percent lower than the impacts projected for the 1979 Preferred Program for the same production level and target year (Table 4-7). Under the 1985 Proposed Action, the following socioeconomics impacts would occur: (1) coal-related employment in the five coal regions that can be compared would be 55,700, which is 19 percent of the 291,000 employment projected for the 1979 Preferred Program; (2) coal-related population would be 138,900, which is 25 percent of the 557,600 population projected for the 1979 Preferred Program; and (3) coal-related royalty and severance tax revenues would be \$580 million, which is 27 percent of the \$2,135 million projected for the 1979 Preferred Program.

TRANSPORTATION

Because the 1979 FES and this supplemental EIS use different approaches and scopes, projected impacts to transportation cannot be directly compared. Projected coal production under the 1985 Proposed Action at the medium production level in 1990 would be about half that projected for the same target year and at the same production level under the 1979 Preferred Program. Therefore, projected impacts to transportation would be lower under the 1985 Proposed Action than under the 1979 Preferred Program.

HEALTH AND SAFETY

Coal mining is and will continue to be a high-risk occupation. Miners and plant workers will continue to be exposed to health hazards such as dust, harmful fumes, stress, and excessive noise. Health and safety hazards under the Proposed Action, however, should decline in the future for two reasons: (1) the shift in production from subsurface mines to surface mines, whose hazard rates are about only a tenth of those of subsurface mines, and (2) new technology in pollution control and mine safety and the enforcement of existing federal dust and safety standards.

The 1979 FES projected a six-region annual total of 4,284 accidents for the Preferred Program at the 1990 medium production level, as compared to 3,356 accidents projected for the 1985 Proposed Action for the same target year and production level.

AIR RESOURCES

Total suspended particulates (TSP) calculated in the 1979 FES and in this supplemental EIS cannot be directly compared because (1) the 1979 FES did not include underground mines as a TSP source, and (2) this supplemental EIS does not include the conversion of coal to other energy forms as a TSP source. By reconciling those two minor differences, projected annual TSP under the 1979 Preferred Program medium production level for 1990 would be 720,400 tons, whereas annual TSP projected for the 1985 Proposed Action would be 373,200 tons, a 48 percent reduction from the 1979 projection.

SUMMARY

SOILS AND VEGETATION

Under the 1985 Proposed Action medium production level for 1990, 55 percent less land would be disturbed than would be disturbed under the 1979 Preferred Program. Because specific sites to be mined or reclaimed are not known at this level of analysis, land disturbance impacts are discussed in general terms. Actual reclamation potential depends on characteristics of specific areas to be reclaimed. Coal development in all regions would affect lands with varying potentials for reclamation. In both the 1979 FED and this supplemental EIS land disturbance by surface mining and coal beneficiation is combined. Since coal development is being extended on the basis of a significant downturn in the 1979 forecasts, coal operations are expected to benefit from reclamation studies and practices that might not otherwise have been available. Therefore, land disturbance from surface mining may be more readily mitigated in the future. Other local disturbances from transportation, conversion, and consumption facilities have not been measured.

AGRICULTURE

Land disturbance under the 1985 Proposed Action would differ in the following ways from land disturbance under the 1979 Preferred Program at the medium production level for 1990: cropland--1 percent less, rangeland--12 percent more, and woodland--13 percent less. These estimates were calculated from figures only for areas with known coal deposits.

Direct losses of wildlife habitat resulting from coal production in 1990 at the medium production level would be about 54 percent less under the 1985 Proposed Action than under the 1979 Preferred Program. Losses of individual animals would also be 54 percent lower but could be significantly higher or lower than that figure depending upon the location of the mines. Indirect impacts to wildlife caused by coal-related human population increases would also approach the 54 percent lower figure, assuming a directly proportional relationship.

RECREATION RESOURCES AND WILDERNESS

The greatest impact on recreation resources and wilderness would be the increased or decreased demand for these resources caused by coal-related population changes. Because the location of population changes was unknown for both the 1979 and 1985 analyses, no direct comparison can be made. Population impact comparisons between the 1979 Preferred Program and the 1985 Proposed Action (see the the comparison of socioeconomic impacts) provides an approximation of recreation and wilderness impacts.

CULTURAL RESOURCES

The size and number of impacts would vary by the amount of surface disturbance and the population increase. At the medium production level in 1990, the 1985 Proposed Action would involve 54 percent less coal production than the 1979 Preferred Program. Consequently, coal-related land disturbance and population increase under the 1985 Proposed Action would be be similarly less than under

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the 1979 Preferred Program. Land disturbance and population increases in specific areas, however, could be significantly higher, depending upon the location of mining.

MINERAL AND PALEONTOLOGICAL RESOURCES

Where development of more than one mineral resource presents a conflict, BLM's policy and industry's preference generally is to sequentially develop the minerals according to an industry-involved agreement. As demand for both resources grows and areas with fewer conflicts are mined out, avoiding conflict areas becomes increasingly difficult. As current mining continues and new areas are opened, more conflicts with other mineral development are expected. Coal production rates under the 1985 Proposed Action in 1990 at the medium production level would be about half of those projected for the 1979 Preferred Program, and fewer future conflicts are expected between coal and other minerals under the 1985 Proposed Action than under the 1979 Preferred Program.

Impacts to paleontological resources can be directly related to the acreage being disturbed, which in turn depends upon the rate and location of coal production. Overall coal production as projected by this supplemental EIS would be about half of that projected by the 1979 FES, and beneficial and adverse impacts to paleontological resources should be much less for the 1985 Proposed Action than for the 1979 Preferred Program. The reduction of impacts, however, would be less than the percentage drop in coal production because proportionately more of the drop in coal production would occur in regions with less significant paleontological resources.

WATER RESOURCES

Impacts to the hydrologic system are related to the amount of area disturbed and the closeness of the disturbance to major surface and ground water bodies. In a program-level analysis, neither the 1979 FES nor this supplemental EIS can accurately assess the proximity factor because of a lack of specific locations of coal mining. The 1985 Proposed Action would involve about half the coal production of the the 1979 Preferred Program, and thus the 1985 Proposed Action's impacts of sedimentation, total dissolved solids, and ground water disruption would be about half of those of the 1979 Preferred Program.

Annual water use projections for all six regions are 81,300 acre-feet in this supplemental EIS and 796,000 acre-feet in the 1979 FES for the Proposed Action/Preferred Program in 1990 at the medium production level. These projections show a 90 percent drop in water use based on a 54 percent drop in coal production. The difference mostly results from the 1979 FES's including water used by powerplants and the supplemental EIS's not reporting on this use. This reduction would be greater in regions where mine-mouth use is common (Fort Union) than in regions from which large amounts of coal are exported (Powder River). The remainder of the difference is due to the reduced coal production and different per capita and per ton water use factors.

SUMMARY

SUMMARY OF THE IMPACTS OF THE PROPOSED ACTION AND PREFERENCE RIGHT AND EMERGENCY LEASING

This section takes a broad look at coal production estimates, interregional shifts, and differences in resource impacts at the year 2000 high production level. Chapter 5 presents a more detailed comparison of the environment impacts of the Proposed Action and Preference Right and Emergency Leasing in relation to No New Federal Leasing (the no-action baseline) for each resource, production level, and time period.

The Powder River Region is projected to produce about 60 percent of the coal for the six regions under the Proposed Action or alternatives and would generally sustain over half of the coal-related impacts.

The major shift in coal production under the Proposed Action relative to No New Federal Leasing would be an increase of 24 million tons/year in the Uinta-Southwestern Utah Region and decreases of 8, 6, and 3 million tons/year in the Powder River, Green River-Hams Fork, and San Juan River regions, respectively. The 24 million tons/year increase represents only 2 percent of the projected national coal production and about 5 percent of the projected western aggregated regional production in the year 2000. This increase of 60 percent or more over No New Federal Leasing in the Uinta-Southwestern Utah Region would be significant in the measured resource impacts shown in Table 5-1 (socioeconomics, health and safety, air quality, soils and vegetation, minerals, and water). Similar increases would occur in impacts that are assessed qualitatively, which are affected by population changes and land disturbance.

In addition, some intraregional shifts would cause changes in impacts, particularly in the Green River-Hams Fork Region. These shifts would cause greater than proportional changes in employment, population, and some resources because of (1) shifts from subsurface to surface mining, (2) increased severance taxes resulting from shifts to Wyoming (which has a dramatically higher tax rate than Colorado), and (3) changes in air quality caused by increased emissions in Wyoming and reduced emissions in Colorado. Coal production would remain the same under all alternatives in the Fort Union Region and the Alabama Subregion, and differences in impacts among alternatives would be slight in these regions.

Coal production under Preference Right and Emergency Leasing would be only slightly higher than that under No New Federal Leasing in the Green River-Hams Fork (4 million tons/year) and the Uinta-Southwestern Utah Region (2 million tons/year). Coal-related impacts under Preference Right and Emergency Leasing in these regions would thus be only slightly greater than under No New Federal Leasing as shown in Tables 5-1 and 5-2.

Because no change in coal production is projected for the other four regions--Fort Union, Powder River, San Juan River, and the Alabama Subregion, resource impacts under Preference Right and Emergency Leasing would differ little if at all from those under No New Federal Leasing.

MAJOR CONCERNS EXPRESSED BY REVIEWERS OF THE DEIS

In their review of the draft supplemental EIS, most commenters focused on concerns with the federal coal management program rather than on impacts to

SUMMARY

the environment resulting from continuing the current program or selecting one of the program alternatives. Several commenters observed that the description of the Proposed Action was not adequately detailed to fully reflect the changes to the program stemming from recommendations in reports by the Commission on Fair Market Value Policy for Federal Coal Leasing (Linowes Commission) and the Office of Technology Assessment. Other commenters felt that elements of the coal management program needed improvement. These elements included the following:

- use of regulations instead of procedural guidance,
- data adequacy to assure sound decisionmaking, and
- application of unsuitability criteria to unleased lands to protect fragile or historic lands and lands with high wildlife values.

An element of concern that is not considered part of the coal management program is the BLM's policy on fee coal exchanges. Exchanges do not constitute a "program" but are processed upon request by the nonfederal party. Recent proposals to enhance opportunities for public comment are reflected in documents included in Appendix 9.

A cross-section of comments expressed concerns with levels of leasing the Department of the Interior is contemplating. Some commenters want the final supplemental EIS to establish proposed regional leasing levels, whereas others urged the Department to commit itself to a sharply curtailed leasing program. The Department's position is that this final supplemental EIS should guide the Secretary of the Interior in adopting a coal management program and that the decisions on how much coal to lease, if any, should have the benefit of local, regional, and state advice as well as the most current analysis of coal supply and demand.

A broad array of commenters believed the EIS was inadequate under the National Environmental Policy Act because (1) it failed to consider an alternative explicitly linking levels of leasing to unfilled demand for coal production, (2) it failed to relate the program to the amount of coal under lease, and (3) it continued a "preconceived" approach that adopted changes before the environmental analysis was completed. The Department has endeavored in this final supplemental EIS to describe its program review and the relationship of this review to the supplemental EIS. Furthermore, discussion of the post-EIS decision process should clarify to readers how the Secretary will arrive at decisions on the form and details of a coal management program.

After the 30-day period following the date this EIS is filed, the Secretary of the Interior will make a number of decisions regarding the federal coal management program. These include the following major categories.

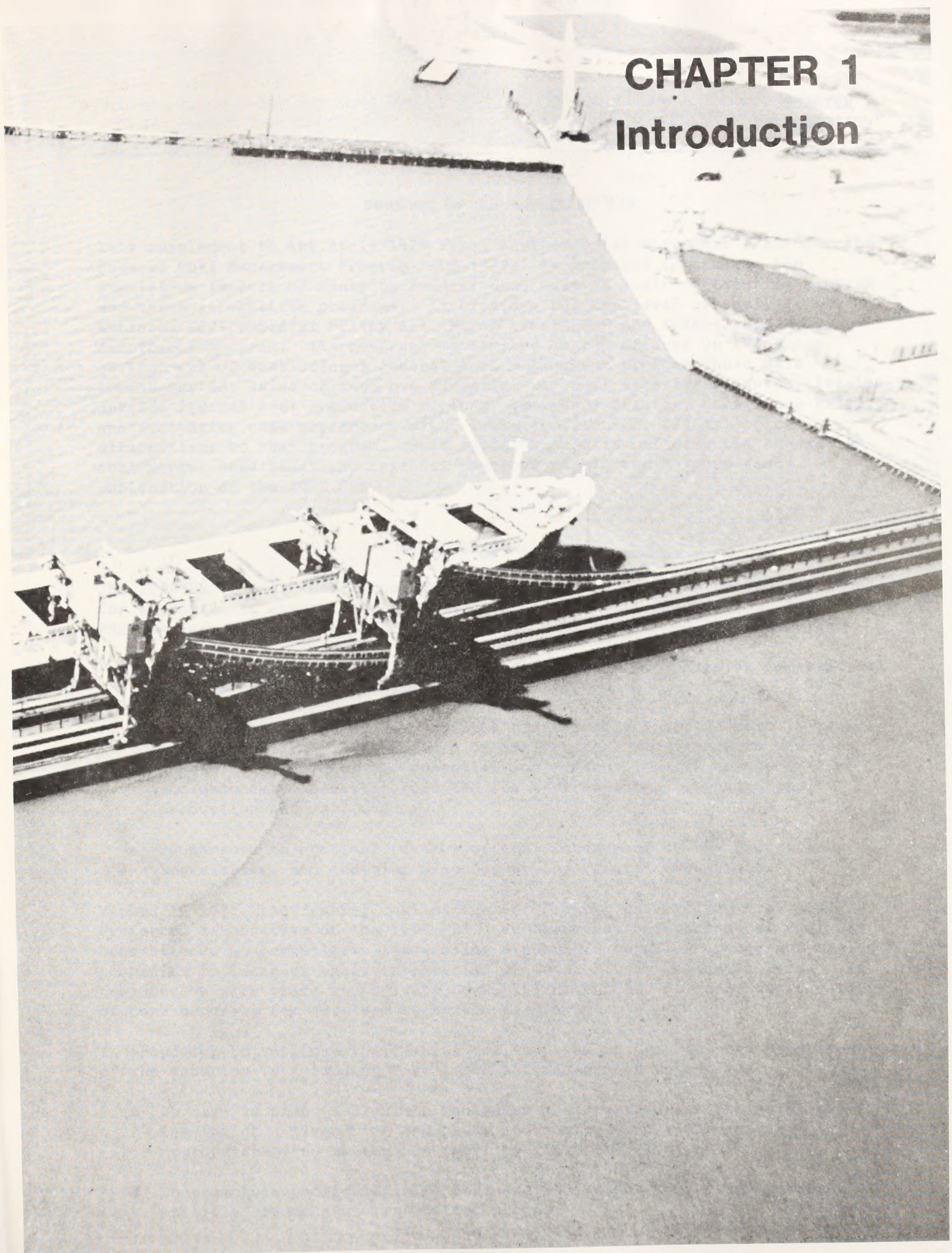
1. Choice of a program - The initial decision concerns what overall program the Department should adopt from among the alternatives studied in this supplemental EIS.
2. Program details - Decisions relating to recommendations of reports by the Office of Technology Assessment and the Linowes Commission need to be made. The major issues are in Appendix 6 of the draft supplemental EIS and have been subjected to public comment over the past 12 to 18 months. These program-related decisions would be implemented through final rulemaking, guidance to field offices, or more proposed rulemaking.

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3. New issues - Several issues and options raised by commenters concerning the Review of Unsuitability Criteria in Federal Coal Leasing will be presented to the Secretary for decision. These issues and concerns include proposed additional criteria. If adopted, some options would require more rulemaking, which would be accompanied by environmental analysis of the impacts of adopting the rule changes. Along with this rulemaking would be a full opportunity for public comment.

CHAPTER 1

Introduction



PURPOSE OF SUPPLEMENTAL EIS

This supplement to the April 1979 Final Environmental Statement (FES) for the Federal Coal Management Program (BLM 1979a) is prepared to analyze the cumulative impacts of managing federal coal under a modified existing program and three alternative programs. It provides the top level of analysis for National Environmental Policy Act (NEPA) tiering of the federal coal management program. Its coverage is limited to the effects on the human environment of continuing a federal coal management program whose main components are based on land use planning, regional activity planning, leasing outside federal coal production regions, emergency leasing, coal lease sales, and processing coal preference right lease applications (PRLAs) or of alternatives to that program. This supplemental EIS reflects the changes in coal market conditions and regional environments in the 6 years since publication of the 1979 FES.

MANAGEMENT OBJECTIVES

The 1979 FES listed three broad issues that, taken together, recognized a need for a program to manage federal coal. As set forth in Chapter 1 of the 1979 FES, the general purpose of coal management policy included the following:

- to address the Nation's serious energy problem of declining domestic oil and gas resources and limited alternatives;
- to reduce the Federal Government's historically reactive role in coal leasing decisions, the failure of earlier coal management to address modern concerns, and the potential for serious impacts to the socioeconomic infrastructure and the environment of expanded coal production and use; and
- to respond to critical reviews of coal management by the executive, legislative, and judicial branches of the Federal Government.

Viewed in 1985, the federal coal management program has evolved from the Preferred Alternative of the 1979 FES. Furthermore, enough federal coal has been offered at competitive lease sales since 1979 to allow energy and mining companies to increase their inventories of federal reserves under lease. In conjunction with state and private coal, this inventory now provides a variety of coal deposits for development as the need arises.

In proposing to continue the federal coal management program, the Department of the Interior is guided by five important management objectives:

- to have in place a flexible mechanism that can analyze the need for leasing at a given time and place and can respond timely and appropriately no matter how small or great the need;
- to promote economically efficient and environmentally sound patterns of multiple resource use in western states;

INTRODUCTION

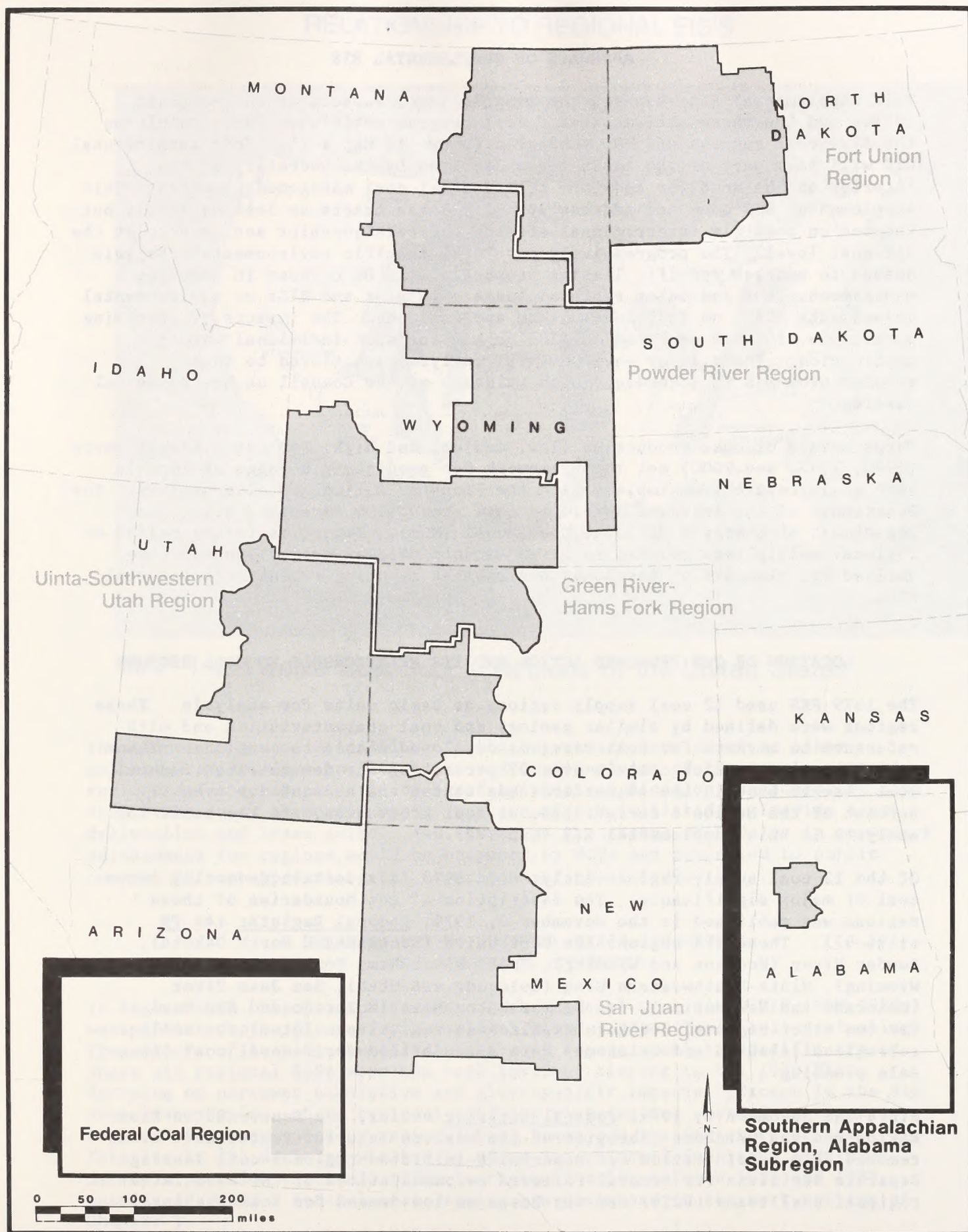
- to maintain an orderly, predictable system that facilitates long-range planning by state and local governments, coal industry and affiliated groups, and other groups and individuals affected by or interested in federal coal development;
- to regionalize most decisions on coal leasing and to grant to state governments a major role in formulating and consenting with such decisions; and
- to promote competition within the coal market.

This supplemental EIS examines four federal coal management program alternatives: (1) the Proposed Action--the program described in the 1979 FES as modified by later regulatory, procedural, and policy changes, (2) Leasing by Application, (3) Preference Right and Emergency Leasing, and (4) No New Federal Leasing. The Proposed Action encompasses changes stemming from the recommendations set out in the Report of the Commission on Fair Market Value Policy for Federal Coal Leasing (Linowes and others 1984) and the Office of Technology Assessment (OTA) report, Environmental Protection in the Federal Coal Leasing Program (OTA 1984). Chapter 2 describes in detail the Proposed Action and all program alternatives. Chapter 3 estimates future coal production under different alternatives. Chapters 4, 5, and 6 analyze in detail the impacts to the national and regional environments of adopting the Proposed Action and each of the alternatives. Chapter 7 responds to comments submitted on the draft supplemental EIS.

RELATIONSHIP TO THE 1979 FES

The major focus of this supplemental EIS is the Department of the Interior's program to manage federal coal with primary emphasis on federal coal within the five regions and one subregion where BLM-initiated leasing will most likely be needed to meet management objectives in the next few years (Map 1-1). This supplemental EIS also reflects federal coal leasing stemming from approval of preference right lease applications (PRLAs) and leases issued under lease by application procedures in areas outside the designated federal coal production regions. The supplemental EIS also includes emergency leasing that may result by the year 2000. Because federal coal ownership outside the five federal coal production regions and one subregion is scattered and of small contiguous acreages, the impacts of leasing in these areas are usually limited to the immediate area affected by the issuance and later development of leases.

The 1979 FES was the foundation document for the Secretary of the Interior's June 1979 decision to adopt and implement a comprehensive coal management program. The 1979 FES evaluated seven coal management alternatives, including a preferred program. Each alternative focused on different administrative and policy limitations on the level of federal coal leasing to be achieved. This supplement to that FES revisits the assumptions and projections described in the 1979 FES and describes several changes in the program made in 1982 and 1983 and, more recently, changes proposed in response to the Linowes and OTA reports. With this supplemental EIS as one of the bases for decision, the Secretary of the Interior may choose to continue the existing program with the changes made in response to the Linowes Commission and OTA reports, or he may decide to select a different program or no program at all.



MAP 1-1 FEDERAL COAL REGIONS

INTRODUCTION

APPROACH OF SUPPLEMENTAL EIS

This supplemental EIS assesses the program-level impacts of the Proposed Action and the three alternatives. Coal program activities focus mainly on the five coal regions and one subregion (shown in Map 1-1). This supplemental EIS will form part of the basis for a decision by the Secretary of the Interior on the need for and form of a federal coal management program. This supplemental EIS does not address specific lease tracts or leasing levels but focuses on possible interregional effects and relationships and impacts at the national level. The progressively more site-specific environmental analysis needed to address specific leasing proposals will be covered in resource management plans and later regional lease sale EISs and EISs or environmental assessments (EAs) on individual lease applications. The impacts of approving permits to mine are analyzed in EISs or EAs for each individual permit application. These later environmental analyses are tiered to this supplemental EIS in accordance with guidance of the Council on Environmental Quality.

Three levels of coal production (low, medium, and high) for three target years (1990, 1995, and 2000) set the framework for predicting a range of impacts that could result from implementing the Proposed Action and alternatives. The Department of the Interior developed coal production forecasts using the Department of Energy's National Coal Model (NCM). Impact estimates relied on regional multipliers related to given amounts of coal production and were derived for elements of the human environment by using recent regional coal EISs.

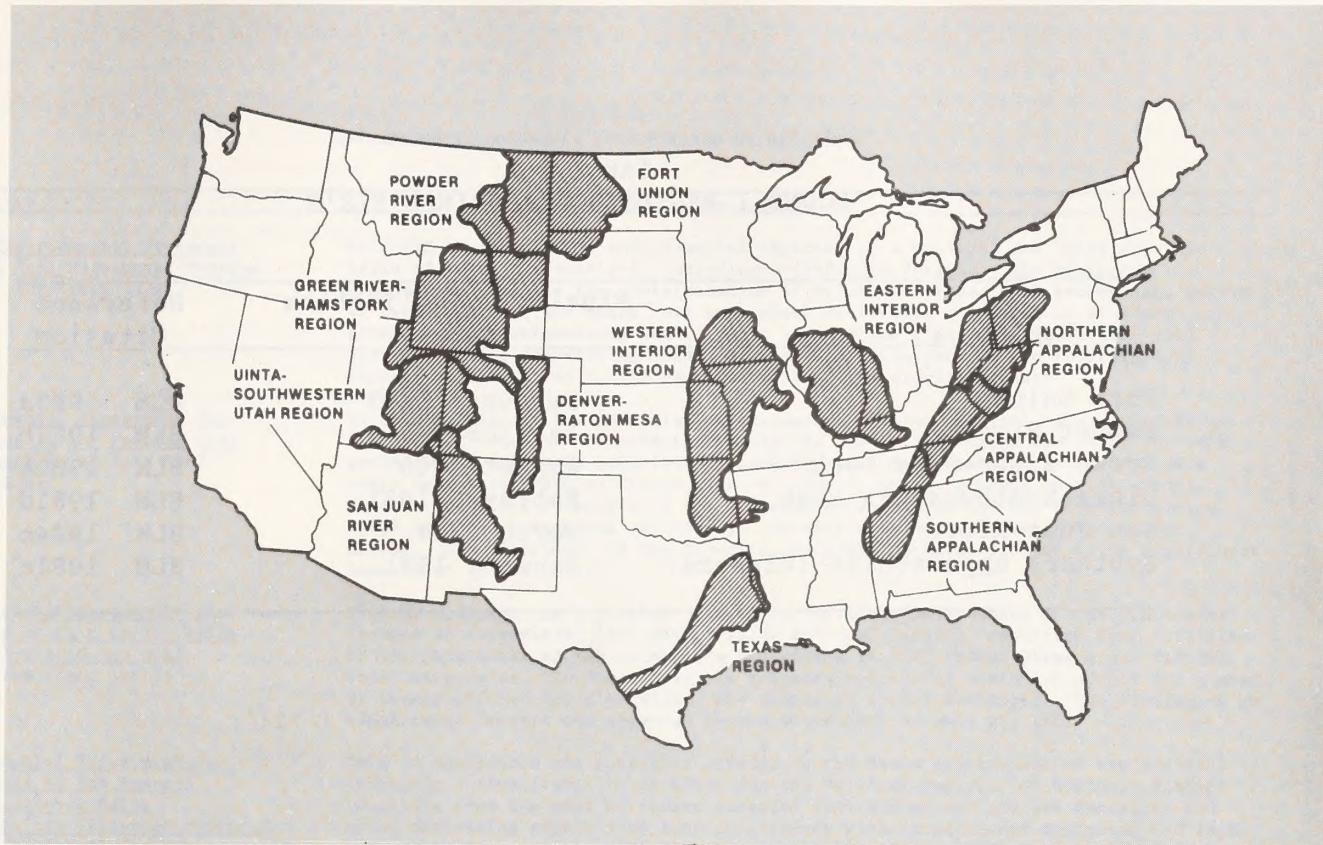
LOCATION OF THE PROPOSED ACTION AND ITS RELATIONSHIP TO COAL REGIONS

The 1979 FES used 12 coal supply regions as basic units for analysis. These regions were defined by similar geology and coal characteristics and with reference to markets for coal reserves developed within the regions. These same 12 regions, which contain over 92 percent of the demonstrated federal coal reserve base in the 48 conterminous states and account for over 97 percent of the Nation's current federal coal production, are the basis for analysis in this supplemental EIS (Map 1-2).

Of the 12 coal supply regions analyzed in 1979, six contain federally owned coal of major significance. The description of the boundaries of these regions was published in the November 9, 1979, Federal Register (44 FR 65196-97). These six regions are Fort Union (Montana and North Dakota), Powder River (Montana and Wyoming), Green River-Hams Fork (Colorado and Wyoming), Uinta-Southwestern Utah (Colorado and Utah), San Juan River (Colorado and New Mexico), and Denver-Raton Mesa (Colorado and New Mexico). For two other regions, Southern Appalachian and Western Interior. Smaller subregions (Alabama and Oklahoma) were also defined for federal coal lease sale planning.

Since the November 9, 1979, Federal Register notice, the Denver-Raton Mesa Region and the Oklahoma Subregion of the Western Interior Region have been removed from consideration for Department-initiated regional coal leasing. Separate decisions for removal followed recommendations of the associated regional coal teams (RCTs) and was based on low demand for coal leasing in

RELATIONSHIP TO REGIONAL EIS'S



MAP 1-2 Twelve Coal Supply Regions of the United States

those areas. Recent discussions in the Department have examined other potential adjustments to the status and configuration of the remaining coal regions and the substitution of tract-by-tract application procedures in each coal state on an as-needed basis in place of BLM-initiated regionwide tract delineation and lease sales. Any change in the status of RCTs or in secondary adjustments for regions would be proposed by RCTs and subjected to public comment before approval by the Department of the Interior.

RELATIONSHIP TO REGIONAL EIS'S AND OTHER ENVIRONMENTAL DOCUMENTS

In August 1980, the Green River-Hams Fork Regional Coal Final EIS (BLM 1980c) was published, the first of six regional Round I EISs (Table 1-1) evaluating the effects of leasing specified amounts of federal coal in specific tracts. These six regional EISs were the next level of tiering to the 1979 FES, focusing on narrower cumulative and site-specific impacts. Except in the San Juan River Region, where regional activity planning was suspended, these regional EISs were used by regional coal teams and the Secretary of the Interior in (1) deciding whether to offer federal coal for lease and (2) determining which tracts to offer in regional sales between 1981 and 1983. Results of Round I federal coal leasing are discussed in the next section of Chapter 1.

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TABLE 1-1
ROUND I REGIONAL COAL FINAL EIS'S

Region	Final EIS Publication Date	Reference Citation
Fort Union	February 1983	BLM 1983a
Powder River	July 1981	BLM 1981b
Green River-Hams Fork	August 1980	BLM 1980c
Uinta-Southwestern Utah	February 1981	BLM 1981d
San Juan River	March 1984	BLM 1984c
Southern Appalachian (Alabama)	January 1981	BLM 1981c

Round II of coal activity planning has begun in five of the six regions. Round II final EISs for the Uinta-Southwestern Utah Region (BLM 1983i) and the Alabama Subregion of the Southern Appalachian Region (BLM 1983d) were published in October and December 1983. A draft EIS for Green River-Hams Fork Round II coal leasing (BLM 1983b) was released for public comment in August 1983. Similarly, a draft EIS for Round II of leasing in the Powder River Region was published in January 1984 (BLM 1984d). In addition, a call for expressions of leasing interest was issued for Round II coal leasing in the Fort Union Region in April 1983 and January 1984, and new tract delineation has taken place for that region. Data from Round I and Round II EISs have been used in this supplemental EIS.

Completion of Round II final regional coal EISs for the Green River-Hams Fork, Powder River, and Fort Union regions were postponed in February 1984 following publication of the Linowes Report (Linowes and others 1984). Likewise, all regional coal activity planning and lease schedules have been suspended. The status of the existing regional coal EISs and other completed regional coal activity planning products will be reexamined under the supervision of the regional coal teams for compliance with the provisions of the coal management program should the Secretary of the Interior select the Proposed Action after this supplemental EIS is published.

The 1979 FES and the environmental assessments on later changes are incorporated by reference into this supplemental EIS (Table 1-2).

HISTORY AND BACKGROUND

TABLE 1-2
ENVIRONMENTAL DOCUMENTS INCORPORATED BY REFERENCE

Title/Date	Description
<u>Final Environmental Statement Federal Coal Management Program</u> April 1979 (BLM 1979a)	This EIS considered the environmental impacts, on a national and interregional basis of seven alternatives, including a Preferred Program. The preferred program provided for the administration of existing leases, PRLA processing, review of federal lands, and other coal management activities to establish standards and procedures for determining when, where, and how the right to mine federal coal should, through competitive sales, be leased. Site-specific and intraregional impacts were deferred to the regional EISs in the tiering process.
<u>Environmental Assessment for Revisions to the Federal Coal Management Rules</u> July 1982 (BLM 1982d)	This EA considered the potential environmental impacts of final rules designed to eliminate burdensome and outdated provisions and to streamline the rules for both prelease and postlease activities. Language was also clarified to conform with court decisions, such as <i>Texaco, Inc. v. Andrus</i> , and to correct editing errors. Because the basic structure of the program was unchanged and the Proposed Action would increase procedural efficiency, the only alternative considered was No Action. The Department of the Interior concurred with the finding of no significant impacts on July 1, 1982.
<u>Environmental Assessment for Decision on Fair Market Value for Federally Owned Coal</u> July 1983 (BLM 1983j)	This EA analyzed the potential impacts on the human environment of the procedural changes in determining fair market value for coal leasing, resulting from criticism of the Department of the Interior's procedures in 1982 Powder River Basin federal coal lease sales. It found that the proposed procedures would not affect the number of tracts offered or, ultimately, the number of tracts developed. The finding of no significant impacts was approved by the Department on July 26, 1983.
<u>Environmental Assessment for Amendments to the Federal Coal Management Rules Unsuitability Criterion Number 7</u> (43 CFR 346.1(g)) March 1983 (BLM 1983k)	This EA considered the potential effects on the human environment of the revision in Criterion 7 (unsuitability of sites for the National Register of Historic Places) resulting from the need to remove unneeded limitations on land use decisions and bring preleasing regulations into consistency with recent court decisions and legal interpretations and the criteria proposed by the Office of Surface Mining for designating lands unsuitable during mine plan review. The Department of the Interior concurred with the finding of no significant impacts on May 30, 1983.
<u>Environmental Assessment for Proposed Revisions to the Federal Coal Management Rules and Procedures</u> September 1985	This EA examined the potential impacts on the human environment of proposed revisions in the coal management regulations and internal instruction documents to implement proposals made by the Secretary of the Interior (in <u>Review of Federal Coal Leasing</u>) in response to recommendations by the Commission on Fair Market Value Policy for Federal Coal Leasing. The Department of Interior concurred with the finding of no significant impact on June 29, 1984. The draft rulemaking for these proposals was published in the <u>Federal Register</u> in November 5, 1984. Other, non-rulemaking proposals have been published in the <u>Federal Register</u> for public comment before implementation.
<u>Environmental Assessment for Proposed Revision of the Federal Coal Management Rules and Procedures</u> January 1985 (BLM 1985a)	This EA examined the potential impacts on the human environment of proposed revisions in the coal management regulations and internal instruction documents made by the Secretary of the Interior (in <u>Review of Planning Considerations in Federal Coal Leasing</u> USDI 1984). The review was in response to options presented by the Office of Technology Assessment (in <u>Environmental Protection in the Federal Coal Leasing Program</u> OTA 1984). Draft proposals were discussed with certain groups in December 1984 and January 1985. Proposed rules are expected to be published in the <u>Federal Register</u> in April 1985. The Department concurred with a finding of no significant impacts on January 5, 1985, and adopted those proposals that do not require rulemaking.

INTRODUCTION

HISTORY AND BACKGROUND

Under the Mineral Leasing Act of 1920 (MLA), the Department of the Interior has responsibility for federal coal leasing. Until 1960, little demand existed for federal coal, and little leasing occurred. In the 1960s, leasing greatly increased. In 1971, the Department imposed a moratorium on coal leasing in response to public concern that the leases were being acquired mainly for speculation rather than development. The moratorium was lifted in July 1979 when the Department issued regulations implementing the Federal Coal Leasing Amendments Act of 1976 (FCLAA).

The 1979 FES (BLM 1979a) describes in detail the background events leading to the development of a modern federal coal management program. The following sections in Chapter 1 update Section 1.2 of that document by describing major program events, regulatory changes, and litigation since April 1979.

MAJOR EVENTS SINCE 1979

Coal Leasing

Table 1-3 lists the regional lease sales held since July 1979. The first regional lease sale under the 1979 program was held in the Green River-Hams Fork Region on January 13, 1981, in Denver, Colorado, and on January 14, 1981, in Cheyenne, Wyoming. Since that time, regional sales have been held in the Uinta-Southwestern Utah, Southern Appalachian, Powder River, and Fort Union regions. In all, 67 coal tracts with 3.7 billion tons of coal reserves were offered at regional lease sales, 46 lease tracts were sold, and 43 leases were issued as of July 31, 1985. The status of five leases in the Montana portion of the Powder River Region, however, depends on the resolution of the Northern Cheyenne litigation (see litigation section in this chapter). The lease tracts sold covered 82,084 acres and contained 2,130 million tons of recoverable coal reserves. Eight tracts were offered in the September 1983 Fort Union sale. Bids were accepted on two tracts covering 6,421 acres and involving 82.6 million tons of recoverable coal reserves, but a district court enjoined the Department from issuing coal leases on those tracts (see Litigation section in this chapter). Two other tracts, the North Beulah and Center tracts, were reconfigured and reoffered and sold under the emergency provisions of the coal management regulations (43 CFR 3425.1-4) on December 15, 1983 and July 18, 1985, respectively. The bids for these two tracts in the September 1983 sale had been rejected.

Table 1-4 lists coal leases sold under the lease-by-application procedures of the 1979 federal coal management program. Since January 1979, the Department has held 61 lease-by-application sales and sold 52 leases involving 34,687 acres and 389.13 million tons of recoverable coal reserves.

As of September 30, 1985, 122 coal preference right lease applications (PRLAs) were pending, a reduction of 62 since 1979. Six more prospecting permits in Utah, reinstated by court order, may become coal PRLAs once drilling is completed under the terms of the permits. From January 1979 to September 30, 1985, 23 PRLAs, covering 58,209 acres and containing 383 million tons of recoverable coal reserves have been approved, resulting in 13 leases. These preference right leases are located in Colorado, Oklahoma, Utah, and Wyoming. During this period, 39 PRLAs were withdrawn by the applicants. In March 1984,

HISTORY AND BACKGROUND

TABLE 1-3
LEASES SOLD IN ALL REGIONAL SALES
(January 1981 through July 1985)

Regions	Date of Sale	No. of Tracts	Acres	Total Recoverable Reserves (millions of tons)	Total High Bonus Bids
Fort Union	9/83	2 ¹	6,421	82.6	\$706,310
Green River-	1/81	6	11,283	87.9	1,730,277
Hams Fork	4/81	2	5,572	64.4	9,013,430
	10/81	1	5,974	62.7	1,792,227
	4/82	<u>2</u>	<u>4,262</u>	<u>112.4</u>	<u>23,164,125</u>
Total-----		11	27,091	327.4	\$35,700,060
Powder River	4/82	10 ²	16,554	1,089.6	43,484,434
	10/82	<u>2</u>	<u>5,176</u>	<u>471.6</u>	<u>23,689,632</u>
Total-----		12	21,730	1,561.2	67,179,066
Southern	6/81	6	5,040	24.3	180,537
Appalachian	12/81	4	3,629	7.3	623,605
	9/82	<u>3</u>	<u>1,520</u>	<u>1.1</u>	<u>247,114</u>
Total-----		13	10,189	32.6	1,051,256
Uinta-	7/81	5	10,854	79.7	14,200,410
Southwestern	2/82	1	160	2.3	158,400
Utah	5/82	1	640	7.5	5,216,000
	2/84	<u>1</u>	<u>4,999</u>	<u>36.7</u>	<u>9,542,041</u>
Total-----		8	16,653	126.2	29,116,851
Total All Regions-----		46	82,084	2,130.0	\$133,753,543

SOURCE: BLM Automated Coal Lease Data System.

NOTE: Data may not add up to totals shown due to independent rounding.

¹Leases have not been issued as of July 1, 1985.

²Total includes five Montana leases that a District Court order declared void. The Department of the Interior has petitioned the court for reconsideration.

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TABLE 1-4
LEASES SOLD IN ALL LEASE-BY-APPLICATION SALES
(January 1979 through September 1985)

State	No. of Tracts	Acres	Total Recoverable Reserves*	Total High Bonus Bids
Alabama	5	1,970	2.01	\$ 158,025.00
Colorado	13	5,317	35.94	330,542.20
Kentucky	4	3,402	7.43	318,630.00
Montana	4	1,428	46.20	35,700.00
New Mexico	2	4,016	76.28	118,592.00
North Dakota	5	2,528	24.56	113,500.00
Oklahoma	5	1,688	3.81	227,186.50
Utah	7	4,351	47.62	4,011,277.00
Virginia	1	251	0.30	27,610.00
Wyoming	6	9,736	144.98	1,852,228.00
Total all States	52	34,687	389.13	\$ 7,193,290.70

Source: BLM Automated Coal Lease Data System.

*Million tons

REGULATORY CHANGES

the Secretary of the Interior agreed with Recommendation III-6 of the Linowes Report, that emphasized the importance of timely processing of outstanding PRLAs. Further discussion on environmental concerns about PRLAs appears later in this chapter.

REGULATORY CHANGES

In July 1979, the Department of the Interior issued federal coal management regulations in 43 CFR 3400, incorporating the provisions of the Federal Coal Leasing Amendments Act (FCLAA), the Federal Land Policy and Management Act (FLPMA), and the Surface Mining Control and Reclamation Act (SMCRA) (44 Federal Register 42584-42652). The regulations were reviewed in 1981 and 1982 to achieve three objectives: (1) to eliminate excessive, burdensome, and counterproductive regulations, procedures, and policies; (2) to promote a "good neighbor" policy, in which participation by state governments is encouraged; and (3) to develop publicly owned resources in a manner that is both environmentally sound and responsive to market demands.

The 1981-82 review resulted in revisions to the July 1979 regulations. Changes in regulations governing the submission of evidence of written consent to lease given by qualified owners of surface land overlying federal coal were made in March 1982, and the other revisions were issued in July 1982 (47 Federal Register 33114-33151) and clarified in August 1983 to further achieve the objectives. The 30 CFR 211 regulations concerning coal exploration and mining on federal lands were redesignated in 43 CFR 3480 in September 1983 (48 FR 41589). This redesignation resulted from the merger of the Conservation Division of the U.S. Geological Survey into BLM. In December 1983, unsuitability criterion 7 was revised. Table 1-5 summarizes regulatory changes in the federal coal program since 1979. Environmental assessments were completed on these changes, and the rule changes were found not to significantly affect the human environment.

Regulations published in May 1976 established diligence requirements before enactment of FCLAA on August 4, 1976. Those regulations mandated each federal coal lease to be a logical mining unit (LMU) and required, among other things, production of 2.5 percent of the recoverable reserves in the lease within 10 years of the effective date of the regulations. In December 1976, regulations were developed that established the diligence requirements for leases issued after enactment of FCLAA. To achieve diligent development, these rules required production of 1 percent of the recoverable reserves in the lease by the end of the tenth year after the lease was issued. Both sets of regulations defined continued operation as production of 1 percent of recoverable reserves on a 3-year average after the achievement of diligent development.

The Department of Energy (DOE) Organization Act of 1978 transferred to DOE the authority to issue diligence regulations. DOE did not assert this authority until 1981, when a joint DOE-BLM task force met to develop proposed regulations to revise the 1976 diligence requirements. Before DOE could develop final rules, however, the Department of the Interior Appropriations Act for fiscal year 1982 returned authority to issue FCLAA diligence regulations to the Department of Interior, whose final diligence regulations were issued as part of the July 1982 coal rule revisions.

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These regulations changed the diligence requirements for pre-FCLAA leases by generally defining diligent development as production of 1 percent of the recoverable coal reserves within 10 years of the first lease readjustment after August 4, 1976. (See Table 1-5, Comparison of July 1979 Regulations and 1982/83 Regulations.) In conjunction with the lessee, BLM establishes recoverable reserves upon which the diligent development and continued operation requirements are based. BLM is solely responsible for enforcing these requirements.

FAIR MARKET VALUE

The history of the Department's procedures to ensure receipt of fair market value since January 1979 is summarized in the Decision Document and Background Material Relating to Fair Market Value for Federal Coal Leases (BLM 1983n).

In the June 1979 Secretarial Issue Document on the Federal Coal Management Program (USDI 1979a), the Secretary of the Interior directed a multidisciplinary task force to examine issues and options concerning the receipt of fair market value for federal coal leases. The task force report, Final Report and Recommendations for the Secretary on Fair Market Value and Minimum Acceptable Bids for Federal Coal Leases (USDI 1979b), was completed in December 1979. In May 1980, the Secretarial Issue Document on Fair Market Value and Minimum Acceptable Bids for Federal Coal Leases (USDI 1980) presented a series of Secretarial decisions on appraisal methodology for lease tracts, lease sale procedures, and minimum bid strategies. These decisions were amplified in a memorandum by the Undersecretary of the Interior to provide more-detailed policy guidance for evaluating tracts too small to stand alone as efficient or economical mining units. This decision, known as the Joseph memorandum, was informally suspended upon the publication of interim coal lease sale procedures on September 13, 1982, and was formally rescinded in June 1983.

In April and October 1982, coal lease sales were held in the Powder River Region of southeast Montana and northeast Wyoming. Immediately before the April 1982 lease sale, procedures were adopted to define a postsale analysis process to determine whether bids constituted fair market value. In earlier lease sales, the Department had published its estimates of tract value in the notice of lease sale as the minimum acceptable bids for the tracts. For the Powder River sale in April 1982, entry-level bids were published in the sale notice. These entry level bids were below the presale appraisal values for some tracts because they were intended to lower barriers to bidder participation at the lease sale and to provide the Department with the opportunity to consider the results of the bidding in deciding whether its presale estimates of tract value were accurate or should be revised.

In the weeks following the sale, criticism of the sale procedures and results mounted, amid widespread allegations--by members of the press, Congress, and public interest groups--that the government had received less than fair market value for the Powder River coal leases. The issue was also raised in one of the two lawsuits filed to challenge this sale.

TABLE 1-5
COMPARISON OF JULY 1979 REGULATIONS AND 1982/83 REGULATIONS

1979 RULES	1982/1983 RULES
A. <u>Land Use Planning</u>	
No special call for coal resource information was issued during land use planning.	BLM will issue a call for coal resource information during land use planning to aid in early consideration of lands with coal potential.
Leasing considerations were confined to areas with high or moderate coal development potential.	The restriction to considering only lands with high or moderate development potential is removed allowing all areas with coal development potential to be considered.
<u>Purpose:</u> To obtain more and better coal resource data earlier in the planning process and to attain the flexibility to meet the coal production needs of a region.	
When the criteria/exceptions were applied in land use planning, public comment was invited on the results.	The application of the criteria/exceptions was incorporated into the RMP procedures. Public comment is invited when the draft RMP/EIS is released.
<u>Purpose:</u> To avoid duplicating in the coal regulations a provision in the land use planning regulations.	
BLM consulted with the governor, affected Indian tribes, and any other federal surface management agency involved before adopting the land use plan.	BLM still consults with these officials as required by the land use planning regulations.
<u>Purpose:</u> To avoid redundancy of regulations.	
Requirements of a land use plan were listed.	List was deleted in 43 CFR 3400.
<u>Purpose:</u> To reduce redundancy. The requirements for a comprehensive land use plan are specified in the land use planning regulations (43 CFR 1600), including opportunities for public comment and consultation with appropriate officials.	
B. <u>Leasing Levels</u>	
Leasing targets were based on Department of Energy projections of national energy needs (demand for production and other factors) in a target year approximately 10 years later.	Leasing levels will be based on various factors that may include land use planning data, regional and national market information, coal resource information, and advice from affected State governors.
The regional coal team (RCT) recommended to the Secretary a single leasing target, usually involving a narrow range.	After receiving alternative leasing levels and a recommended leasing level from an RCT, the Secretary will set a leasing level in a broadly defined range.
<u>Purpose:</u> Leasing levels represent a more market-oriented approach to approximating need for leasing than the leasing target approach with its attempt to closely match coal lease supply to projected demand for coal production in the target year approximately 10 years later.	
C. <u>Presale Consultation</u>	
The Secretary consulted in writing with governors in states where lease sales were proposed before making a coal lease sale decision.	The Secretary consults in writing as before but also published in the Federal Register his reasons for accepting or rejecting governor recommendations.
<u>Purpose:</u> To show the Department's commitment to coordination and consultation with the states that bear the impacts and obtain much of the financial benefits of federal coal leasing.	
D. <u>Unsuitability Criteria</u>	
The rules established a series of 20 unsuitability criteria to be applied to lands being considered for leasing, to PRLAs, and to existing leases.	Unsuitability criteria will no longer be applied to existing leases during land use planning, but the mandatory criteria under SMCRA will still be applied to these leases during mining plan review.
The leasing of federally owned coal for surface mining was prohibited if coal was overlain by districts, sites, buildings, structures, or objects included on or eligible for inclusion on the National Register of Historic Places.	Automatic prohibition against coal leasing was removed for eligible properties. National Register sites are still protected, however.
<u>Purpose:</u> To eliminate an unneeded regulation, because the application on existing leases had nearly always been postponed until mining plan review. The criterion of amendment conforms with Office of Surface Mining Reclamation and Enforcement criteria for designation of lands as unsuitable during mining plan review and reflects court decisions on the Surface Mining Control and Reclamation Act (SMCRA).	
All criteria were applied before any exceptions and exemptions were applied. Areas where 2 or more criteria existed were considered unsuitable and the exceptions were not applied.	All criteria are applied first. Then each exception is applied, at the discretion of the surface manager. Any exception found applicable would be reflected in subsequent lease stipulations.
<u>Purpose:</u> To make procedures consistent with new policy.	

1979 RULES	1982/1983 RULES
E. <u>Emergency Leasing</u>	
Lease applicants had to meet certain criteria before being able to bid at emergency lease sales.	The revised regulations eliminate the requirements that (a) a lease applicant have a mine in production 2 years before filing an application; (b) a lessee be restricted to one emergency lease per operation, and (c) competition for leases sold under the emergency criteria be limited only to bidders meeting those criteria.
State governors were notified through the RCT of pending applications for coal lease sales.	State governors are doubly notified of pending lease-by-application actions through the RCT and separately.
<u>Purpose:</u> To follow the intent of Congress that all coal be leased competitively and to present more evidence of the Department's commitment to work with the states.	
The regulations were silent.	BLM considers any surface owner unqualified if the Department does not receive evidence from the owner and has no means of determining the qualifications.
<u>Purpose:</u> To require qualified surface owners to share the responsibility in establishing their right to refuse to consent to lease federal coal for surface mining.	
F. <u>Surface Owner Consent</u>	
Surface owners determined to be unqualified under section 714 of SMCRA used the regular appeal channel through Interior Board of Land Appeals (IBLA).	Surface owner appeals now go to the BLM state director and then to the BLM Director. Surface owners cannot appeal to IBLA.
<u>Purpose:</u> To speed up the decision process.	
The regulations were silent	BLM considers any surface owner unqualified if the Department does not receive evidence from the owner and has no means of determining the qualifications.
<u>Purpose:</u> To require qualified surface owners to share the responsibility in establishing their right to refuse to consent to lease federal coal for surface mining.	
G. <u>Alluvial Valley Floor Exchanges</u>	
Alluvial valley floor fee coal exchanges were discretionary.	Alluvial valley floor fee coal exchanges are mandatory rather than discretionary.
<u>Purpose:</u> To provide stronger recognition of the rights of lessees and owners of alluvial valley floors. The changes make the regulations consistent with the court's decision in <u>Texaco and NCA v. Andrus</u> .	
H. <u>Lease Sales</u>	
Competitive lease sales could be held by sealed bid only or sealed bid followed by oral auction.	All competitive lease sales must be held by sealed bid only.
Minimum acceptable bid was \$25 per acre.	Minimum acceptable bid of \$100 per acre.
<u>Purpose:</u> To provide more assurance of the public's receipt of fair market value for the coal resource.	
I. <u>Diligence</u>	
All nonproducing coal leases issued before August 4, 1976 (the effective date of FLCAA-- the Federal Coal Leasing Amendments Act) had to be producing coal in commercial quantities by June 1, 1986. ¹	Pre-FLCAA lessees will have 10 years from the date of the first lease readjustment after August 4, 1976, to be producing coal in commercial quantities. ²
<u>Purpose:</u> To address concerns that the 1979 rulemaking was a unilateral adverse change in fundamental lease terms (diligent development obligations) and had a poor legal basis to be enforceable before readjusting those leases. The 1986 deadline set forth in the 1976 regulations as the time requiring production for all pre-FLCAA leases may have resulted in many leases failing to meet diligence simply because the market could not absorb that much production by 1986. The Department would be left in the situation of cancelling leases that could not meet diligence in 1986 and then face a shortfall in federal lease development in the early 1990s. Now, all leases will not be due to produce by 1986 but will be spread out between 1986 and 2005.	
J. <u>Public Participation</u>	
Public participation in development of leasing targets was sought through hearings on DOE production goals and a written comment period.	The requirement for hearings and a written comment were deleted.
<u>Purpose:</u> DOE stopped preparing production goals. Public participation in the new leasing level process is sought during a 30-day public comment period on the initial leasing level technical paper.	

¹According to the July 1979 federal coal management regulations in 43 CFR 3400.0-5(i), "commercial quantities" for leases issued before August 4, 1976 refers to an amount of production equal to 2.5 percent of the lease reserves.

²In the July 1982 regulations, the term "commercial quantities" was defined to mean an amount of production equal to 1 percent of the lease reserves for all leases.

FAIR MARKET VALUE

As part of its July 1982 rulemaking, the Department issued final regulations that raised minimum bids from \$25 to \$100 per acre and eliminated the use of oral bidding in lease auctions. The procedures adopted before the April 1982 Powder River sale were changed somewhat in September 1982, on an interim basis. This change was made to allow the Department to publish representative market value estimates (when those estimates exceeded \$100 per acre) as the minimum bid in the lease sale notice for production maintenance tracts rather than set a flat rate of \$100 per acre where, in all likelihood, only one bidder would compete at the lease sale. The postsale appraisal methodology was also modified in these interim procedures.

In May 1983, the General Accounting Office issued a report that criticized the procedures used in the Powder River sales (Analysis of the Powder River Basin Federal Coal Lease Sale: Economic Valuation Improvements and Legislative Changes Needed; GAO/RCED-83-119; May 11, 1983)(GAO 1983a). In July 1983, the Secretary approved a revised set of coal lease sale procedures governing (1) presale evaluation of tracts, (2) the use of sealed bidding with no indication of the government's value estimates in the sale notice, (3) the averaging of serious bids after the sale as a means of determining bid acceptance standards, and (4) guidelines for reoffering tracts that fail to receive an acceptable bid.

In August 1983, Congress imposed a moratorium on most forms of coal leasing and established the Commission on Fair Market Value Policy for Federal Coal Leasing (Linowes Commission) to review the Department's procedures for determining the fair market value of federal coal tracts. Congress directed the Secretary of the Interior to appoint members to the commission to study the following issues:

- The method of estimating fair market value, including economic valuation methods, presale versus postsale analysis, and the value of independent review of appraisals.
- The impact on competition and on achieving fair market value of leasing large amounts of coal, particularly under depressed market conditions, versus a more moderated leasing schedule.
- Whether the leaseholder should share more in the risk of holding the lease by increasing rental rates on a regionally adjusted basis.
- Whether the public should share in the increase in value of its resources by imposing a tax on transfers of surface or lease rights.
- The methodology for assigning value to maintenance tracts, on the basis of the coal's value in the ground to the adjoining mine owner rather than as a competitive lease tract, when no competitive interest is expected.
- Possible methods of increasing competition, such as changing tract delineation methods, requiring meaningful fees to accompany expressions of interest, adopting intertract bidding procedures, or requiring a minimum number of bids for a competitive sale.

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- Methods of evaluating tracts to reflect regional differences in coal, and establishing cents-per-ton minimums on a regional basis.
- Whether presale planning procedures are adequate, particularly with regard to land use planning, public participation, and the role of regional coal teams in determining the timing and amount of leasing.
- Methods of carrying out authorized exchanges so as to reduce adverse effects on sale competition.

The Linowes Commission published its report in February 1984 (Linowes and others 1984). The report made 36 recommendations and several judgments and conclusions. On May 12, 1984, 90 days following publication of this report, the congressionally imposed moratorium on most forms of coal leasing expired. On March 19, 1984, the Secretary released the Department's response to the commission's report (USDI 1984a). He accepted and agreed to implement 35 of the commission's recommendations (Table 1-6), conditioned on full public review and comment. An environmental assessment (EA) (BLM 1984a) on adopting these proposals led to a finding of no significant impact to the human environment. This EA has since been revised in response to public comment (BLM, September 1985) (Appendix 9). On October 31, 1984 and November 5, 1984, proposed guidelines and regulations that would permit the Department of the Interior to implement the accepted Linowes Commission recommendations were published for comment in the Federal Register. On February 8, 1985, these items were republished in the draft supplemental EIS for comments. An analysis of public comments on the issues in these draft procedures and regulations is included in Appendix 6. A Guide to Federal Coal Property Appraisal (Appendix 7) has also been published for comments. The Guide documents the Department's appraisal procedures developed in response to the Linowes Commission Report.

ENVIRONMENTAL CONCERNS: OFFICE OF TECHNOLOGY ASSESSMENT REPORT, PRLA'S, AND UNSUITABILITY CRITERIA

OTA REPORT

Soon after Congress established the Commission on Fair Market Value Policy for Federal Coal Leasing, it directed the Office of Technology Assessment (OTA) to study whether the Department's program to lease federal coal was compatible with nationally mandated environmental protection goals. The OTA's report, Environmental Protection in the Federal Coal Leasing Program (OTA 1984), was released on May 24, 1984. It contains policy options in the following 10 areas of environmental concern:

- reducing leasing rates,
- decentralizing decisionmaking authority,
- improving the effectiveness of public participation,
- ensuring that comprehensive area planning is completed before a lease offering,
- developing a means of improving the data base and access to it,
- providing guidelines and standards for assessing the adequacy of the data base,

TABLE 1-6
SUMMARY OF RECOMMENDATIONS OF THE COMMISSION ON FAIR MARKET VALUE POLICY FOR
FEDERAL COAL LEASING AND DEPARTMENTAL PROPOSALS

Commission Recommendation	Department of the Interior Proposals
The government should establish and announce a coal leasing schedule to promote predictability of of leasing actions. (III-1)	The Department would continue to maintain a 5-year schedule and would ensure that the need for the sale was reviewed at multiple decision points. The Federal-State Advisory Board would review the schedule at its annual meetings.
The states, through their participation on the regional coal teams (RCTs), should continue to assist in establishing leasing levels and in setting leasing schedules. (III-2)	The Department would continue to support state representation on the Federal-State Coal Advisory Board and the RCTs.
The government should not seek to raise the price above the competitive market level nor lease so much as to flood the market. (III-3)	In setting leasing levels, the Department would direct the RCTs to consider past lease sales, coal production capacity, coal reserve inventory, industry expressions of interest, minimum leasing and competition for new supply contracts. All factors would be weighed against public policy needs.
The government should seek to maintain adequate diversity in the quantity and quality of federal coal lease holdings. (III-4)	To promote diversity, tracts in many coal regions would be offered. Tracts would be chosen for production maintenance and new production in accordance with tract delineation guidelines.
The amount of coal leased should achieve a fair return consistent with other public policy objectives. (III-5)	Policies and procedures for land use planning would continue to consider coal along with other competing uses. During activity planning, tracts would be ranked by RCTs and then analyzed in EISs. Goals other other than maximizing revenues would be carefully considered.
Coal Preference Right Lease Applications should be rapidly processed to a decision point. (III-6)	The Department will continue to process coal PRLAs as quickly as possible and will prepare monthly coal PRLA status reports.
Tracts should be selected to enhance attainment of fair market value. (IV-1)	The factors affecting the degree of competition will be studied and listed. Procedures for analyzing alternative tract configurations will be offered for public comment.
More drilling should be sponsored and cooperative drilling should be encouraged. (IV-2)	The Department will sponsor more drilling and encourage cooperative drilling.
Cooperative leasing procedures are desirable. (IV-3)	BLM will actively pursue opportunities for cooperative leasing.
The exchange of federal and nonfederal coal should be pursued more vigorously. (IV-4)	Fee coal exchanges should continue to be pursued carefully and prudently. Department of Justice review of fee coal exchanges would be requested.
Leasing policies should distinguish between new production tracts and maintenance and bypass tracts. (V-1)	Definitions for new production, maintenance and bypass tracts would be prepared and would distinguish between captive (single bidder) and potentially competitive tracts.
The government should continue to rely on bonus bidding. (V-2)	The Department will continue to employ bonus bids with fixed royalties.
Intertract bidding should be used to lease some federal coal. (V-3)	Guidelines would be published for review and comment.
To promote more competitive bidding, the government should test the feasibility of and experiment with a variety of action techniques.	The Department will request public comment and consider experimentation with a variety of techniques.
Minimum submissible bids should be established on a regional basis and expressed as some amount per ton. (V-5)	Comments will be solicited on establishing minimum bids on a regional cents-per-ton basis.
The government should have the authority to negotiate a fair price for federal coal leases where competition has failed. (V-6)	The Department will study the issue and work with Congress to determine whether a feasible approach could be defined.
Industry bids received on tracts with extensive competition, along with the government's presale appraisals, can constitute important sources of information for postbid acceptance and rejection decisions. (V-7)	Industry bids will continue to be used in acceptance and rejection procedures.

Note: Commission recommendations and Department of the Interior proposals are abridged. For the full text see March 19, 1984 Review of Federal Coal Leasing (USDI 1984b).
RCT = regional coal team.

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TABLE 1-6 (concluded)
SUMMARY OF RECOMMENDATIONS OF THE COMMISSION ON FAIR MARKET VALUE POLICY FOR
FEDERAL COAL LEASING AND DEPARTMENTAL PROPOSALS

Commission Recommendation	Department of the Interior Proposals
Security of confidential data before the lease sale should be assured. (V-8)	Procedures for data security will be strengthened for lease sales.
Model design, input data and analysis for estimating fair market value should be improved. (VI-1)	The use of Monte Carlo techniques would be evaluated and compared with CREV and other similar models.
The small business tax adjustment should not be used in computing appraisal value. (VI-2)	The use of the small business tax adjustment has been eliminated.
The comparable sales adjustment should include factors identified as appropriate on the basis of comprehensive review. (VI-3)	Professional comment would continue to be sought on appraisal techniques in the areas of economies of scale, production rate, and royalty severance tax adjustments.
Estimates of tract value for noncompetitive tracts should be based on value to the adjoining coal owner or mine. (VI-4)	Public comment will be sought on how best to evaluate captive tracts.
Regulations should require lessees to report details of lease assignments. (VI-5)	Public comment would be sought on specific guidance to field offices on what details should be required.
Bidders should provide data on prices and other terms of private coal transactions for comparability analysis. (VI-6)	Recommendation not accepted.
The Department's capacity to perform appraisals should be enhanced. (VI-7)	The number of highly qualified mineral appraisers would be increased, professional capabilities of existing personnel would be enhanced, and the use of private sector appraisers would be considered.
Congress should consider allowing a 10-year extension on the diligence requirement for post-FCLAA leases. (VII-1)	The Department would work with Congress on this issue.
For pre-1976 coal leases, advance royalties should be paid beginning at the time of the next lease readjustment. (VII-2)	Similar incentives should exist for pre- and post-FCLAA lessees.
Congress should examine the need for limiting payments for surface owner consents. (VII-3)	No change or review of this issue should begin until Congress finishes examining it.
Congress should consider giving the Secretary authority to lower royalty rates before a coal lease sale. (VII-4)	The Department would be pleased to work with Congress on this issue.
The basis for calculating federal royalty payments should be the F.O.B. price minus all state and local severance taxes. (VI-5)	This issue was deferred to Congress.
Congress should consider a review to assess whether shippers of coal are adequately protected from anticompetitive or discriminatory practices. (VII-6)	No position was taken on this issue.
Tract delineation teams should have an economic analysis capability. (VIII-1)	Economic analysis capability would be added to tract delineation teams.
A centralized economic appraisal function should be organized for policy, and policy should be implemented on a regional basis. (VIII-2)	This reorganizing effort is now being undertaken.
The centralized coordination group should develop a uniform appraisal method. (VIII-3)	Appraisal procedures would be continued to be defined.
The sale panel should have appraisal expertise. (VIII-4)	Qualifications for sale panel members would be published for review and comment.
The Inspector General should conduct periodic audits of the coal program. (VIII-5)	The Inspector General would conduct periodic audits and a complete review of the program.

Note: Commission recommendations and Department of the Interior proposals are abridged. For the full text, see Review of Federal Coal Leasing (USDI 1984b).
RCT = regional coal team.

ENVIRONMENTAL CONCERNS

- incorporating cumulative impact assessments in presale planning decisions,
- establishing policies and procedures for environmental lease exchanges,
- establishing uniform procedures for environmental evaluation of PRLAs,
- evaluating policies and procedures for leasing on split-estate and checkerboard lands.

On July 9, 1984, the Secretary responded to the OTA report in Review of Planning Considerations in Federal Coal Leasing (USDI 1984b). The Department agreed to consider making changes in the areas of concern reported by OTA. Table 1-7 lists these changes. BLM prepared an environmental assessment on these changes (BLM 1985a) and reached a finding of no significant impact on the human environment. On February 8, 1985, proposed guidelines that would permit the Department of the Interior to implement the OTA policy options were published for comment in the draft supplemental EIS. Proposed rules that would adopt certain OTA proposals were published in the Federal Register on March 15, 1985 (50 FR 10508). Public comment was also requested on implementation of other proposals that did not require rule making, including the unsuitability review discussed below. An analysis of public comments on these proposed rules and guidelines is included in Appendix 6.

PREFERENCE RIGHT LEASE APPLICATIONS

In August 1982, the National Wildlife Federation (NWF) filed a Freedom of Information Act request to obtain copies of all environmental documents prepared on all outstanding coal PRLAs and on the preference right leases issued in 1981 and 1982. On the basis of their review of these documents, NWF and the Natural Resources Defense Council (NRDC) wrote letters citing what were, in their view, serious deficiencies in those documents and in the overall processing of coal PRLAs. In a May 1983 letter, an attorney representing NRDC stated that NRDC would file a contempt of court citation unless the Department took "constructive steps leading to compliance" with NRDC v. Berklund.

In March 1983, BLM evaluated the environmental documents prepared for the coal PRLAs for compliance with the National Environmental Policy Act (NEPA) and with the order in NRDC v. Berklund. As a result of that review, BLM directed that further environmental work be done on all PRLAs except those covered by the following documents: the San Juan River Regional Coal Second Draft Environmental Impact Statement (BLM 1983e); the Savery Coal Environmental Statement (BLM 1983o); the Final Decision Record and Environmental Assessment of Coal PRLAs--Beans Spring, Table, and Black Butte Creek Projects (BLM 1982e); the Environmental Assessment of North Fork Mining (BLM 1982f) and the Fort Union Coal Regional Final Environmental Impact Statement (BLM 1983a).

Discussion began with the environmental groups in May 1983 and included the following issues:

- depth of treatment in EISs of alternatives to preference right lease issuance discussed in NRDC v. Berklund;
- form of mitigation required, i.e., design criteria or performance standards;

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TABLE 1-7
A SUMMARY OF OFFICE OF TECHNOLOGY ASSESSMENT REPORT OPTIONS AND DEPARTMENTAL RESPONSES

Option	Response
1. Reduce leasing rates	<p>a. RCTs will consider existing resources, and amount of data gathering and analysis needed to resolve issues when developing long-range schedules.</p> <p>b. Decisions on leasing levels and final sale offerings will be based on a variety of factors, including market conditions and environmental concerns.</p> <p>c. Market conditions and environmental concerns are to be weighed by the RCTs in making recommendations to the Department.</p> <p>d. Smaller and more frequent sales, to gauge the market better and obtain information to use in later sale decisions.</p>
2. Decentralize decisionmaking authority	<p>a. The Department will accept RCT recommendations unless a clear reason exists not to do so, and will explain this reason in writing.</p> <p>b. The RCT chairman will be the BLM state director from the state primarily involved.</p>
3. Improve effectiveness of public participation	<p>a. BLM will develop and release land use planning and activity calendars, identifying points for public involvement.</p> <p>b. The public will be invited to participate in the call for coal and other resource information at the onset of land use planning.</p> <p>c. Availability of maps and other information describing the application of the unsuitability criteria will be announced to the public.</p> <p>d. Activity planning will begin with an RCT meeting to review a market analysis and the summary of the land use planning data and decisions.</p> <p>e. The notice for the first RCT meeting in activity planning will also announce the availability of the market analysis report and summary information at least 45 days before the RCT meeting.</p> <p>f. All decision documents will specify the nature of the decision, the key factors leading to it, supporting information (or a reference to the document containing it), and an easily understood summary.</p> <p>g. RCTs will use representative working groups, including all segments of the community, to develop information for RCT consideration.</p> <p>h. BLM manuals and regulations will specify minimum timeframes for public comments, which will be no less than 30 days for a land use planning or activity planning document.</p>
4. Ensure that comprehensive area planning is completed before offering leases.	<p>a. BLM will expeditiously complete Resource Management Plans (RMPs) and initiate new coal activity planning only for areas where RMPs have been completed. For areas outside coal production regions and where regions are abolished, management framework plan coal amendments may be used for coal leasing decisions where no RMP is completed.</p> <p>b. Before tract delineations, RCTs will use existing land use plans as a base to identify issues to be addressed and data to be gathered as part of activity planning.</p> <p>c. BLM will take the needed steps to ensure better coordination with the Forest Service.</p> <p>d. BLM will improve coordination with other federal agencies, state and local governments, and private organizations.</p>
5. Develop a means of improving the data base and access to it.	<p>a. BLM will prepare supplemental program guidance to clarify program-specific resource management planning requirements.</p> <p>b. BLM will prepare, in consultation with other agencies, data adequacy standards and guidelines.</p> <p>c. BLM will investigate new sources of data, such as exploration licenses for hydrologic and soils data.</p> <p>d. A BLM/OSM working group will suggest ways to search, extract, and apply mine plan data.</p>

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TABLE 1-7 (concluded)
A SUMMARY OF OFFICE OF TECHNOLOGY ASSESSMENT REPORT OPTIONS AND DEPARTMENTAL RESPONSES

Option	Response
6. Provide meaningful guidelines and standards for assessing the adequacy of the data base.	e. BLM will refine and integrate various systems (such as ALMES, GIS, ESIS, IHICS) to increase their availability.
	a. At the beginning of land use planning, BLM will include a call for other resource information to aid in evaluating lands for possible lease sale.
	b. Information from the call for resource information, along with BLM data bases, will be used to eliminate lands of little interest for development or land that has limited coal resource but appear to have a large number of resource conflicts and limited data to resolve them.
	c. A single summary of all land use plans to be used in a round of regional coal activity planning will be prepared for the initial RCT meeting and be available to the public before the meeting.
	d. Tract profiles will include assessments of the coal and noncoal information and other data needed to adequately evaluate the tract.
	e. RCTs will use data assessments in tract profiles in ranking tracts before their selection for regional coal leasing EIS. Tracts lacking large amounts of data will be ranked as less desirable and may be dropped altogether.
	f. In their final recommendations, RCTs will separately identify any tracts not recommended because data is insufficient to adequately assess the tract (except data normally acquired at the mine permitting stage).
	g. RCTs will identify tracts with data problems without considering the EIS alternative(s) in which the tract was analyzed or of the effect a tract's deletion would have on the recommended leasing level.
	h. After consulting the other members, the RTC chairman will appoint three science advisors to serve as ex officio members on a test basis to assist the RCT in evaluating data.
	i. OSM will assist BLM in evaluating data to assure that tracts leased will have a high probability of meeting SMCR requirements.
7. Incorporate cumulative impact assessments in pre-sale planning decisions.	a. BLM will apply the four coal screens sequentially from the top down, except where it appears to be more efficient to apply them in another order.
	b. In their review of cumulative impacts of coal development, the RCTs will consider any threshold analysis performed during land use planning and will expand this analysis, where appropriate, to the broader area.
	c. BLM will review the effect of 1982-83 unsuitability criteria rule changes, asking interested parties for their concerns and for information of the effects of the changes and reporting on the need for revisions. A report will present BLM's findings and conclusions for procedures, guidelines, and data adequacy. (See Appendix 6 for the Notice of Availability of a report on this subject.)
	d. BLM will work with other organizations to refine the threshold concept and make any proposed guidance available for public comment.
8. Establish policies and procedures for environmental lease exchanges.	e. BLM will reinstate the consideration of threshold analysis in the coal management regulations.
	a. The Department will direct a thorough review of the BLM Land Exchange Manual and, if needed, provide more detailed guidelines on land and lease exchanges.
9. Evaluate policies and procedures for leasing on split estate and checkerboard areas.	b. The Department will explore, with Congress, the possibility of providing the Secretary with general lease exchange authority.
	a. Review of split estate and checkerboard land issue should be sponsored by Congress.
10. Establish uniform procedures for environmental evaluation of preference right lease applications.	a. BLM will prepare monthly reports to document the status of each PRLA.
	b. RCTs will receive a copy of the PRLA monthly report and will consider the amount of coal in PRLAs in making regional coal leasing recommendations.

Note: OTA recommendations and Department of the Interior proposals are abridged. For the full text, see USDI 1984a.

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- degree of public review and participation in PRLA processing: initial showing, environmental assessment or EIS preparation, final showing determination, lease issuance or application rejection; and
- how to comply with the language in the district court's opinion that EISs should contain estimated costs of compliance with recommended mitigation.

As of September 1, 1985, negotiations are continuing between the Department and environmental groups.

UNSUITABILITY CRITERIA

The unsuitability criteria in 43 CFR 3461 are used to identify lands that must be set aside from coal leasing to preserve resources or values of concern. The 20 criteria are one of several means of assuring that federal coal development would proceed in an environmentally acceptable manner. These criteria can be divided into four categories:

- those required under Sections 510 or 522 of SMCRA (e.g., federal lands systems, buffer zones along rights-of-way and next to communities and buildings, and alluvial valley floors);
- those that are discretionary under Section 522 of SMCRA (e.g., scenic areas, land with important scientific values, municipal watersheds, and floodplains);
- those that embody requirements under other laws that the Department of the Interior proposes to enforce by applying unsuitability criteria (e.g. federally listed endangered species and bald and golden eagle-related criteria); and
- those that are not required by law but that the Department of the Interior proposes to apply in its discretion as good public policy (e.g., state resident fish and wildlife, and state-proposed criteria).

Some of the criteria involve interpreting legal requirements within circumscribed limits. Others represent an attempt to set limits on field-level resource management judgments that have previously been entirely discretionary.

The proposal to use unsuitability criteria to screen out federal lands that are not acceptable for coal development was a main feature of the preferred federal coal management program described in the 1979 FES (BLM 1979a). The objective in developing the unsuitability criteria was to provide a means for the Secretary of the Interior to conduct a part of the federal lands review required by the Surface Mining Control and Reclamation Act (SMCRA) during land use planning and to protect other resources and values for legal and public policy purposes.

The 1979 Secretarial Issue Document (USDI 1979a) for the federal coal management program documents decisions reached on the unsuitability criteria. At first, 24 criteria were suggested, but after technical review and further study, only 20 criteria were adopted. Criteria dealing with buffer zones for

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state lands designated unsuitable, prime farmlands, wetlands, and reclaimability were not adopted. The state land buffer zone criterion was not adopted because the Secretary concluded that criterion 20 and the multiple use screen carried out in land use planning provided adequate protection. The Secretary deleted the prime farm lands and reclaimability criteria because the data gathering process is too costly and time consuming to undertake in land use planning and these values are fully protected in the mine permit review process. With regard to the wetlands criterion, the Secretary directed that further study be conducted to clarify the meaning of the criterion. Although this study resulted in options for the reproposal of the criterion, no further action was taken.

With the adoption of the unsuitability criteria came three concepts important to the use of the criteria. First, the criteria are to be used during the preparation of land use plans. By doing so, potential lease areas would not be delineated as tracts only to find later that so many stipulations must be added to a lease or mine plan to protect other resources that the tract would no longer be economical to mine.

Second, lands are assessed to be unsuitable only where enough data exists to allow this assessment to be made with reasonable certainty. If data is lacking to properly apply any criterion or exception during land use planning, the plan must discuss the reasons why and disclose when in activity planning, the data needed to make an assessment with reasonable certainty would be generated. The only exception to this requirement is criterion 19, which deals with alluvial valley floors. The application of criterion 19 may be deferred until the mine plan review stage due to the cost of obtaining the detailed hydrologic data needed to determine an alluvial valley floor. Only those potential alluvial valley floors actually proposed for mining would have to undergo this costly determination.

Third, BLM makes the most use of existing data, and, where new data is needed, a staging strategy is employed that maximizes the use of cost-effective methods to gather data. Data that cannot be obtained in a cost-effective and timely manner at the land use planning stage may be obtained and evaluated later during activity planning. In the case of alluvial valley floors, data will be reviewed as part of the mine permit application package. The land use plan must describe the adequacy and reliability of the data used in making the unsuitability assessment.

In March 1985, BLM prepared and distributed to all those receiving copies of the draft supplemental EIS, a report entitled A Review of the Unsuitability Criteria in Federal Coal Leasing (BLM 1985d). This report was prepared in response to OTA Option 7 (see Table 1-7, Response C for Option 7). The Review is reprinted in Appendix 1. BLM received 22 comment letters on the report. The responses to these comments are also included in Appendix 1. The Review responds to findings of the OTA's study, Environmental Protection In The Federal Coal Leasing Program (OTA 1984) and implements a commitment by the Secretary of the Interior in the response to that report.

The OTA report did not make specific recommendations concerning the use of the unsuitability criteria but discussed five perceived problem areas: (1) inadequate data analysis to support decisions, (2) lack of time for adequate presale planning and environmental analysis, requiring the applying of the criteria to be deferred until activity planning (3) insufficient regulatory

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guidelines and standards for determining whether existing data is adequate, (4) inconsistent application of criteria from one region to the next due to a lack of uniform procedures, and (5) the lower likelihood that an area would be excluded from further consideration for leasing by the use of the unsuitability criteria based on 1982 and 1983 changes to the program regulations in 43 CFR 3400.

The Secretary of the Interior asked BLM to examine the effects of the 1982 and 1983 changes in the rules governing the unsuitability criteria. BLM expanded the scope of the Secretary's directive to evaluate the application of the unsuitability criteria, to determine what conclusions could be drawn from an extensive review, and to decide what BLM might do to develop data adequacy standards and guidelines for their use.

Major Findings. With regard to rule changes for the unsuitability criteria, without applying both the 1979 unsuitability regulations and the 1982/83 amendments to the same parcel of land, BLM could not accurately measure the effects of the change.

Where BLM did reapply the criteria after the regulatory changes, the additional experience in criteria application and the availability of more data had a greater effect than did the changes in the rules.

Other major findings are as follows.

- No criteria need to be added or deleted.
- Resources and land uses not addressed by the unsuitability criteria can be examined as part of the multiple use assessment required by the federal coal management program regulations.
- Problems in applying the unsuitability criteria are traceable to a failure to develop uniform procedures and formats.
- Surface management agencies need to give more attention to training and directing personnel in applying the criteria.
- Improvement in the effectiveness of the process depends on the development of guidance now in progress.
- BLM's proposal to reinstate in the 43 CFR 3400 rules the public comment period on applying the criteria will correct the perception that BLM does not allow public comment on applying the criteria.
- Subsection 43 CFR 3461 should be revised so that the policy and procedural language in 3461.3-1 precedes the list of the 20 criteria and to clarify that application of unsuitability criteria is only one aspect of the federal lands review.
- Guidance should be developed on the relationship between the unsuitability criteria and the multiple use assessment. The language in 43 CFR 3420.1-4(e)(3) should be revised to clarify the purpose of the multiple use assessment.

MANAGEMENT OF EXISTING LEASES

- The opinions of the Office of the Solicitor, U.S. Department of the Interior, concerning the criteria should be circulated to all field offices.

MANAGEMENT OF EXISTING LEASES

The 1979 FES viewed the management of existing leases as a significant element of the Department of the Interior's program to manage federal coal. All seven programmatic alternatives shared virtually the same approach toward the management of existing leases. Major elements of the lease management component of all 1979 EIS programmatic alternatives included the following:

- enforcing the diligence provisions of the Federal Coal Leasing Amendments Act (FCLAA),
- conducting a federal lands review for existing leases, including the applying of the unsuitability provisions of the Surface Mining Control and Reclamation Act to leases issued before 1979,
- possibly exchanging coal lands and leases to shift the impacts of coal mining to lands where such impacts are more acceptable,
- readjusting lease royalties to modern percentage royalty rates 20 years after lease issuance,
- enforcing maximum economic recovery requirements.

Policies, regulations, and procedures governing the Department's management of existing leases have evolved since 1979. But as in the 1979 FES, the Department is not proposing alternative ways of managing existing leases. Instead, all four alternative coal management programs analyzed in this supplemental EIS would share a common lease management component as described in Chapter 2. The requirements of the lease management component of the federal coal management program has been considered in the analysis of available coal supplies (See Chapter 3) and is thereby incorporated in determinations of the environmental consequences of each program alternative in Chapter 4.

The Department of the Interior is responsible for approving operation and reclamation plans for federal coal leases under the requirements of the Mineral Leasing Act of 1920, as amended (MLA). Regulations in 43 CFR 3480 clarify the lease management procedures described in the 1979 FES by (1) separating Office of Surface Mining Reclamation and Enforcement (OSM) responsibilities from those of BLM; (2) retaining and clarifying BLM responsibilities for exploration, production, development, resource recovery and protection, and collection of royalties; and (3) revising and clarifying the requirements of the Federal Coal Leasing Amendments Act (FCLAA) for exploration, maximum economic recovery, resource recovery and protection plans, commercial quantities, diligent development, continued operation, and logical mining units.

A 1979 Memorandum of Understanding among the Office of Surface Mining Reclamation and Enforcement (OSM), BLM, and the U.S Geological Survey concerning the division of agency responsibilities is being updated to reflect

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organizational changes brought about by Secretarial Order No. 3087, which merged Mineral Management Service (MMS) (formerly the Conservation Division of the U.S. Geological Survey) onshore minerals management responsibilities into BLM. This revised Memorandum of Understanding, under review by OSM and BLM, will clarify the procedural arrangements by which BLM and OSM will carry out their responsibilities with respect to coal mining and exploration on federal lands. Regulatory provisions for MMS coal royalty collections are found in 30 CFR part 200. The BLM-MMS Memorandum of Understanding of December 15, 1983, details the division of responsibility between those two bureaus relating to revenue collection, information exchange, audits and inspections, review of regulations, and processing of royalty reductions.

The need to develop a nationwide policy on lease Inspection and Enforcement and Production Verification (I&E/PV) that provides uniform and consistent national guidance was identified in the Secretarial Report to the Congress on the Adequacy of Royalty Management for Solid Minerals (BLM 1984) according to Section 303 of the Federal Oil and Gas Royalty Management Act of 1982. The report assessed the implications of absence of consistency in guidelines for I&E/PV for coal and other solid leasable minerals and concluded that a need exists to develop (1) national guidelines, (2) effective systems to monitor I&E/PV activities (oversight, field visits and automated data storage), and (3) formal training for personnel involved in I&E/PV activities. Final National Policy for I&E/PV and associated guidelines are being transmitted to the BLM field offices.

BLM has published guidelines in 1985 on the enforcement of the diligence provisions of Section 3 of FCLAA. Section 3 amended MLA to prohibit the issuance of certain new onshore federal mineral leases to anyone holding a federal coal lease for 10 years unless that lease is producing coal in commercial amounts. Also in 1985, BLM published guidelines on the formation of logical mining units (LMUs) containing federal coal leases. A logical mining unit is the consolidation of coal leases into a single unit and may include nonfederal as well as federal leases. Descriptions of these two sets of guidelines are included in Chapter 2 under the description of the Proposed Action. In February 1985, draft guidelines were issued setting forth procedures for determining the eligibility for temporary reductions in royalty rates for federal solid mineral leases, including coal.

EXCHANGES

Since 1979, the Department of the Interior has processed two types of exchanges that transfer ownership or rights to coal resources: fee coal exchanges and coal lease exchanges. Fee coal exchanges involve the transfer of the ownership of coal deposits. These exchanges are authorized under Section 206 of the Federal Land Policy and Management Act (FLPMA) when the Secretary of the Interior determines that transfer of ownership of the land or the underlying mineral resources on the lands is in the public interest. The regulations governing fee coal exchanges are found in 43 CFR Group 2200, which govern all land exchanges. Guidance has been proposed to require regional coal teams to solicit public comments and evaluate the effects of any proposed fee exchanges involving coal on regional competitive lease sales.

EXCHANGES

Coal lease exchanges involve the relinquishment of an existing federal or Indian coal lease in exchange for issuance of a new coal lease of equal value. Lease exchanges must be specifically authorized by federal law because the Federal Coal Leasing Amendments Act of 1976 bars issuance of coal leases without competition. Regulations governing coal lease exchanges are found in 43 CFR 3435. Table 1-8 summarizes the status of authorized lease exchanges and fee coal and authorized coal lease exchanges undertaken since 1979.

One specific class of authorized coal lease exchanges is alluvial valley floor (AVF) coal lease exchanges, authorized by Section 510(b)(5) of the Surface Mining Control and Reclamation Act (SMCRA) and implemented by the regulations in 43 CFR 3436. If an AVF lease exchange proponent meets the qualification requirements of SMCRA, the proponent may be granted a federal coal lease of equal value without competition.

Section 510(b)(5) of SMCRA also authorizes and mandates AVF fee coal exchanges. AVF fee coal exchanges are carried out under Section 206 of FLPMA and the regulations of 43 CFR 2200. As of September 1, 1985, the one AVF fee coal exchange the Department has processed to date is in litigation in Federal District Court.

The first fee coal exchanges were completed in 1983 with the Rocky Mountain Energy Company in Wyoming and the Meridian Land and Minerals Company in Montana. The Meridian exchange was the subject of a March 7, 1983, General Accounting Office report (GAO 1983b). The GAO report concluded the following:

"Although the proposed exchange of coal mineral rights between Meridian Land and Mineral Company and the Bureau of Land Management in Montana faces a number of policy and procedural problems, there is no sound basis for interrupting BLM's consideration at present. Continued development of information gathering and analysis will be necessary to allow a reliable judgment of the proposal's merits, and Interior intends to use the experience in formulating specific criteria and procedures for considering future exchanges." (Emphasis added.)

In response to this GAO report, BLM issued a fee exchange policy for leasable and salable minerals on September 26, 1983.

In early 1984, both the Commission on Fair Market Value Policy for Federal Coal Leasing (Linowes and others 1984) and Office of Technology Assessment (OTA 1984) reports on federal coal leasing made recommendations concerning fee coal exchanges. In its response to those reports, the Department of the Interior stated that it would (1) make changes in its September 26, 1983, fee exchange policy for leasable and salable minerals; (2) formalize or establish a method to submit fee coal exchanges to the Department of Justice for antitrust review; and thoroughly review the land exchange manual and, (3) if needed, provide more detailed guidelines on the processing of land exchanges. The land exchange manual and handbook were thoroughly reviewed and then issued in August 1984 (see Appendix 9). A procedure to submit proposed fee coal exchanges to the Department of Justice was published as proposed rulemaking in the Federal Register on September 13, 1985, pages 37389-37391 (see Appendix 9). The September 26, 1983, land exchange policy for leasable and salable minerals has been amended and is incorporated in the manual as Appendix 3.

TABLE 1-8
EXCHANGES INVOLVING COAL SINCE 1979
(1979 - September 1, 1985)

Type	Legal Authorization	Description	Status
Fee title exchange	Public Law 95-553	Directed the Secretary of the Interior to determine if acquisition of lands around Lake DeSmet, Wyoming would be in the public interest. Acquisition would be by fee title exchange, exchange of coal interests, or exchange of federal coal leases.	In July 1979 the Assistant Secretary determined that this exchange was not in the public interest.
Coal lease exchange	Public Law 95-554	Authorized Secretary to issue coal leases for relinquishment of 8 PRLAs in Utah and 9 leases in Wyoming. The 9 Wyoming leases are affected by Interstate Highway 90 (I-90).	In June 1981 the Utah exchange was rejected because the 8 PRLAs had insufficient value for exchange purposes. Lease exchanges were completed with two I-90 lessees in FY 82 and 83. Negotiations continue with the 4 other leases.
Coal lease exchange/ certificates of bidding rights	Public Law 96-401	Authorized the Secretary to issue non-competitive coal leases or certificates of bidding rights in compensation for relinquishing coal leases or permits on the Northern Cheyenne Indian Reservation. Leases would be issued or bidding rights given after cancellation agreements are agreed to by the Secretary, the lessee or permittee, and the Northern Cheyenne Tribe.	Cancellation agreements were reached with 4 of the 6 lessees and permittees by the statutory deadline--January 1, 1982. The other 2 permittees have to seek compensation in the U.S. Court of Claims. One lease was issued as a result of cancellation agreements to date.
Coal lease exchange	Public Law 96-475	Directed the Secretary to exchange 2 federal coal leases in the Bisti Wilderness Area for other federal coal leases in New Mexico.	Exchange coal lease issued in September 1984.
Alluvial valley floor fee coal exchange	Section 510(b), SMCRA	Whitney Benefits qualifies for a fee title exchange of its coal-bearing lands in Sheridan County, Wyoming, for title to public lands of equal value elsewhere.	This exchange is under litigation in Federal District Court as of September 1, 1985
Fee mineral exchange certificates of bidding rights	Public Law 96-476	Provided for acquiring nonfederal interests within Rattlesnake National Recreation Area in Montana by exchange, purchase or gift, or exchange for bidding rights or lease modification.	On November 19, 1983, a certificate of bidding rights was issued to the affected party in the amount of \$14.3 million.
Fee mineral exchange	Section 206, FLPMA	Meridian Land and Mineral Co. proposed to exchange fee title to some of its coal-bearing lands to BLM for the fee title to some of BLM's coal-bearing lands near Circle, Montana, to consolidate land and resource ownership within checkerboard ownership area.	Exchange became final in September 1983, subject to pending litigation.
Fee mineral exchange	Section 206, FLPMA	Rocky Mountain Energy (RME) proposed to exchange private inholdings in Grand Teton National Park for public coal-bearing lands in the Corral Canyon area, Wyoming.	Titles were exchanged on June 24, 1983. To equalize land values, RME agreed to pay \$1.5 million to BLM. Exchange was upheld in litigation.
Fee mineral exchange	Section 206, FLPMA	The Fish and Wildlife Service proposes to acquire Teton Valley Ranch property for National Elk Refuge in exchange for coal-bearing publiclands in the Leucite Hills area, Wyoming. The public lands are next to RME's Prospect Point Coal Mine.	Negotiations continue on this land exchange.
Monetary credits	Public Law 96-466	Directed the Secretary to acquire all nonfederally owned coal within the Cranberry Wilderness Area, West Virginia. Monetary credits would be given in exchange for the interests.	Affected party accepted \$14.7 million as settlement in January 1985.
Fee mineral exchange	Section 206, FLPMA	Santa Fe Pacific Railroad proposes to exchange their mineral interests in lands in McKinley County, New Mexico with publicly owned minerals in the private-public checkerboard ownership area. Lands involved total over 16,000 acres. Santa Fe Pacific also proposes to exchange its private lands within Chaco Culture National Historical Park, New Mexico, where coal mining is prohibited, for public minerals next to an area planned for coal mining.	Negotiations and processing continue on this exchange proposal.
Fee mineral exchange	Section 206, FLPMA	State of Colorado would acquire federal coal in exchange for about 27,000 acres of state owned grazing lands in the Fort Carlson maneuver area.	Negotiations continue on the exchange proposal

LITIGATION

The additional guidance BLM is developing for processing fee coal exchanges is in the form of additional amendments to the September 26, 1983, land exchange policy for leasable and salable minerals. A draft of this document is included in Appendix 9. Upon approval, the amended policy will be made a part of the BLM Manual.

The Department of the Interior believes that the procedures described in Appendix 9 address the concerns of commenters on this issue. These procedures, however, are not part of the federal coal program, and the Department has no way at this time of predicting how often these procedures will be used.

LITIGATION

Although the adequacy of the 1979 FES (BLM 1979a) was not challenged in court, other aspects of the program and its operation were. The discussions below summarize the major lawsuits brought against the Department of the Interior regarding the federal coal management program.

Preference Right Lease Applications. In NRDC v. Berklund, et al. (609 F. 2d 553) the U.S. Court of Appeals for the District of Columbia Circuit upheld the ruling of the U.S. District Court (458 F. Supp. 925, D.D.C. 1978) on November 9, 1979. The District Court ruled that the Secretary of the Interior has no discretion to refuse to issue a preference right lease if a prospecting permittee shows a discovery of coal in commercial quantities. The District Court also ruled that the Secretary should consider environmental compliance costs as part of the commercial quantities determination, and that the National Environmental Policy Act's (NEPA) environmental process applies to the full proposed action of lease issuance, even though lease issuance is not discretionary. Current negotiations over the processing of PRLAs are described above.

Powder River Sale. Two lawsuits challenged the 1982 regional coal lease sale for the Powder River Region. The cases were originally filed in the U.S. District Court for the District of Columbia, where a motion for a restraining order against the lease sale was denied. On the government's motion, the cases were consolidated and transferred to the federal court in Montana. The court heard arguments in December 1982 on cross motions for summary judgment and motions to dismiss specific allegations. The Montana court has now separated the cases for decision.

In Northern Cheyenne Tribe v. Watt, Civil No. 82-116 (D. Mont.), the tribe asserted that the EIS prepared for the sale was deficient because of its alleged failure to adequately discuss the effects of the proposed regional leasing on the plaintiff's reservation. On May 28, 1985, the court ruled in favor of the tribe and declared void the leases issued as a result of the sale. The Department of the Interior has petitioned the court for reconsideration of its order to cancel the leases. The lessees have petitioned the court to intervene and for reconsideration.

In National Wildlife Federation v. Burford, Civil No. 82-117 (D. Mont.) the plaintiff groups challenged the presale procedures and the sale itself. The plaintiffs alleged that the Department failed to receive fair market value for the lease tracts sold, that the land use plans underlying the sale acreage were formulated in violation of statutory planning standards, that the

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Secretary's rules (and resulting plans) on the treatment of reclaimability in the federal lands review under Section 522(b) of the Surface Mining Control and Reclamation Act (SMCRA) are legally deficient, that certain changes in the treatment of surface owner consents were illegal, and that certain tracts were not delineated properly. The State of Wyoming and several lessees have intervened as defendants. On September 3, 1985, the court ruled in favor of the Department on the tract delineation and surface owner consent issues, dismissed the allegations concerning reclaimability, and postponed ruling on the land use planning and fair market value issues until completion of review and possible supplementation of the record and further argument by the parties.

Coal Leasing Rules. In Natural Resources Defense Council v. Burford, Civil No. 82-2763 (D.D.C.), eight groups have joined to challenge the July 1982 revisions to the July 1979 coal program rules. The suit seeks (1) to prohibit the Department from implementing the revised coal regulations, (2) to declare the revised regulations improperly issued, and (3) to prohibit any future coal lease sales until the reclaimability standard of Section 522(a)(2) of SMCRA is applied to the lease tracts before a sale. In support of their lawsuit, the plaintiffs allege that the Department, in amending the rules, violated the National Environmental Policy Act (NEPA) and various provisions of the Federal Coal Leasing Amendments Act (FCLAA), FLPMA, and SMCRA. The parties have filed and fully briefed cross motions for summary judgment. The court has made no decision on this matter.

Fort Union Sale. On August 3, 1983, the House Committee on Interior and Insular Affairs adopted a resolution directing the Secretary of the Interior to withdraw lands in the Fort Union Coal Region (North Dakota and Montana) from coal leasing. Several tracts studied and covered by the resolution were scheduled for sale on September 14, 1983. The committee cited section 204(e) of FLPMA, 43 U.S.C. 1714(e), as authorizing the committee to command the Secretary to make an emergency withdrawal that would prevent or delay the scheduled sale.

The National Wildlife Federation brought suit to prohibit the Secretary from conducting the scheduled sale until he had complied with the August 3, 1983, resolution--National Wildlife Federation v. Watt, Civil No. 83-2648 (D.D.C.). In a letter of September 9, 1983, to the Chairman of the House Committee, the Secretary explained that he was not complying with the committee resolution because it was an unconstitutional attempt to legislate, in violation of the legislative procedures in Article I of the U.S. Constitution. The Secretary relied on the recent Supreme Court decision in INS v. Chadha, 358 U.S. 358, 103 S. Ct. 2764 (1983). The committee chairman intervened as a plaintiff, and various bidders intervened as defendants.

The District Court refused to enjoin the sale but issued a preliminary injunction on September 29, 1983, to prevent the Department from issuing leases to successful bidders at the sale. The District Court then issued a permanent injunction in January 1984, holding that the Department of the Interior was obligated by its own withdrawal rules to make a withdrawal when the House of Representatives made an emergency withdrawal resolution. The court did modify its injunction to conform with the committee resolution to allow emergency lease sales. The court did not consider the constitutional issue, and the Department chose not to appeal the injunction. The injunction will remain in effect until the committee revokes its resolution, the Department, after notice and comment, repeals its withdrawal regulation, or any of several similar contingencies occur.

Permanent Surface Mining Regulation Litigation II. In the U.S. District Court for the District of Columbia, several groups challenged, among other OSM regulations, the regulations in 30 CFR Parts 740-746, which are issued by OSM to implement SMCRA with regard to federal lands. The regulations allow states to assume regulatory authority for surface coal mining and reclamation on federal lands. The Secretary retains his responsibility to approve mining plans on federal lands, to designate certain federal lands as unsuitable for mining, and to regulate other activities on federal lands. The plaintiffs argued that these rules illegally delegate the Secretary's responsibilities under MLA and SMCRA. On July 6, 1984, the court ruled in its Round I decision that the Secretary is required under MLA to review the operation and reclamation plan components of a SMCRA permit application for a federal coal lease and that he may not delegate this authority to the states. The regulations in 30 CFR 740-746 were returned to the Department for revision to reflect the court's ruling. The Department has appealed this decision.

Alluvial Valley Floors and Unsuitability Criteria. Texaco, Inc. and the National Coal Association filed suits challenging the alluvial valley floor (AVF) exchange provisions of the 1979 federal coal program regulations (43 CFR 3436-7), certain unsuitability criteria, and the application of the unsuitability criteria to leased lands. These suits were joined by the court and are referred to as Texaco and NCA v. Andrus, et al., Civil No. 79-2448 (D.D.C. August 15, 1980). The suits alleged that the applicable regulations exceeded SMCRA's authority.

On August 15, 1980, the U.S. District Court generally upheld the bases of the unsuitability criteria, ruled in favor of the Department of the Interior on some points, and returned several regulations to the Department for revisions consistent with its opinion.

1. The court held that AVF fee coal exchanges authorized by Section 510(b)(5) of SMCRA are mandatory, but the Secretary of the Interior retains discretion to determine whether the values of the tracts to be exchanged are equal and to determine which particular tract of federal land will be disposed of through exchange. The court further held that fee coal owners are entitled to the benefits of an exchange even though they have not made substantial financial and legal commitments toward developing their coal resources.
2. The court held that SMCRA amended the Endangered Species Act and that the Eagle Protection Act and the Migratory Bird Treaty Act were consistent with SMCRA, so that coal operators who invested substantial financial and legal commitments before SMCRA are exempt from the provisions of these acts. With respect to the Endangered Species Act, the court's Round II decision of October 1, 1984, in In Re: Permanent Surface Mining Regulation Litigation II, Civil No. 79-1144, at 62-63, makes it apparent that a coal operator is not exempt from the Endangered Species Act. Rather, the 1980 decision means only that the Endangered Species Act cannot be the basis for the Secretary to ignore substantial financial and legal commitments when he makes unsuitability determinations under Section 522 of SMCRA.

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3. The court declared invalid that portion of Unsuitability Criterion 1 that made land under study for inclusion in a federal land system, such as the National Wildlife Refuge System, unsuitable for coal leasing. The court held that SMCRA authorizes an unsuitability determination only when the lands are actually included in the federal lands system and that the Secretary cannot establish an unsuitability standard contrary to clear congressional intent.
4. Floodplains Unsuitability Criterion 16 was declared to be unauthorized because it makes floodplains unsuitable for coal leasing unless coal mining on floodplains can be shown not to pose a threat of loss of life or property. The court held that the Secretary must establish that a threat of loss of life or property exists before a floodplain can be deemed unsuitable for coal leasing.
5. Unsuitability Criterion 17, dealing with municipal watersheds, was returned to the Department for revision because the exception that would allow coal leasing where the municipal water supply would be adequately protected required the concurrence of officials of the affected local government. The court held that this concurrence requirement was unauthorized by SMCRA and was therefore unlawful.
6. Finally, the court held that only those unsuitability criteria listed in SMCRA may be applied to lands that had been leased before SMCRA.

These revisions were made to the federal coal management regulations when they were amended in July 1982.

Alton Litigation. In Utah International v. Watt, Civil No. 81-0090W (D. Utah) (consolidated) the plaintiff challenged Secretary Andrus's decision to designate certain lands in the Alton coal field in southern Utah as unsuitable for surface mining under Section 522 of SMCRA. The lawsuit represented a challenge to the first designation of lands as unsuitable for surface coal mining. Utah International holds several federal coal leases affected by the designation.

On cross-motions for summary judgment, the District Court disposed of several issues in this challenge (553 F. Supp. 872 (D. Utah 1982)). The District Court held that SMCRA's designation procedures require that the unsuitability hearings be legislative rather than adjudicatory. The court also held that SMCRA authorizes the designation of lands outside national park boundaries and that the Secretary's designation is not void because the decision was not issued within 60 days after the unsuitability hearing record was closed. Finally, the court found nothing in SMCRA or its legislative history that requires the Secretary to compile a data base and inventory before designating federal lands as unsuitable.

On August 25, 1984, the court dismissed Utah International's claims that the Secretary's designation of unsuitability was improper and the State of Utah's remaining claims. On February 13, 1985, the court dismissed with prejudice the remaining claims of the Sierra Club and the Environmental Defense Fund on the basis of a joint stipulation. In this motion, the Sierra Club and the Environmental Defense Fund agreed to dismiss the suit subject to certain actions of the regulatory authority in processing Utah International's application for a permit to mine in the Alton petition area.

FEDERAL AND STATE CONSTRAINTS ON COAL MANAGEMENT

On April 29, 1985, the Court granted Utah International's motion to dismiss without prejudice its claims that the unsuitability designation was an unconstitutional taking of its property rights. At the same time, Utah International announced its intention to file suit in the United States Court of Claims for what it believes was an unconstitutional taking of its private property.

FEDERAL AND STATE CONSTRAINTS ON AND AUTHORITIES FOR A COAL MANAGEMENT PROGRAM

Section 1.3.1 of the 1979 FES (BLM 1979a) discusses in detail the major laws affecting the federal coal program, including the Mineral Leasing Act of 1920 and Federal Coal Leasing Amendments Act of 1976; the Federal Land Policy and Management Act of 1976; the Mineral Leasing Act for Acquired Lands; and the Surface Mining Control and Reclamation Act of 1977. Other authorities are cited in less detail to provide a perspective on factors that may directly influence the demand for federal coal and the location and intensity of coal development and related activities. Many other relevant laws regulate aspects of coal development and energy conversion. The most pertinent of these laws are summarized in Table 1-9, Federal Laws Affecting Coal Development and Energy Conservation.

INTERAGENCY RELATIONSHIPS IN FEDERAL COAL MANAGEMENT

Department of Energy

The Department of Energy (DOE) was established in October 1977, following enactment of the Department of Energy Organization Act (DOE Act). Under the DOE Act, many of the energy-related functions of several agencies were consolidated in a single department. See the 1979 FES (BLM 1979a), Introduction and Background, for the history of DOE's early authority and responsibility in the federal coal leasing program.

On December 23, 1981, Congress enacted Public Law 97-100 (Appropriations for the Department of the Interior and Related Agencies for FY 1982), which returned certain functions related to the leasing of federal lands to the Department of the Interior. Specifically, this act transferred to the Secretary of the Interior the authority to issue regulations for the following purposes:

- to foster competition for federal leases,
- to establish diligence requirements for coal development on federal leases,
- to implement alternative bidding systems for the award of federal leases,
- to set rates of production for federal leases, and
- to specify procedures, terms, and conditions for acquiring and disposing of federal royalties taken in kind.

TABLE 1-9
FEDERAL LAWS AFFECTING COAL DEVELOPMENT AND ENERGY CONSERVATION

Popular Name	Public Law/U.S. Code Citation	Purpose	Major Relevance
American Indian Religious Freedom Act of 1978.	95-341, 42 U.S.C. 1996	Establishes the policy to protect and preserve the rights of American Indians to exercise their traditional religions.	Insures for traditional American Indian religions the same rights of free exercise enjoyed by other religions
Archeological Resources Protection Act	96-95, 16 U.S.C. 470 aa	Increased protection for archeological resources 100+ years old and increased criminal penalties.	Updates and expands upon Antiquities Act of 1906. Increases protection for archeological resource.
Antiquities Act of 1906	59-209; 16 U.S.C. 431	Regulates antiquities excavation and collection (including fossil remains). See FLPMA. Protect historical values on public land.	Mitigates potential harm to historical, archaeological, and paleontological resources.
Archaeological and Historical Preservation Act of 1974; Archaeological Salvage Act	93-291, 86-523; 16 U.S.C. 469	Provides for recovery of archaeological, scientific, historic, and prehistoric data endangered by federal construction or federally licensed or assisted projects activities, or programs. Provides for preservation of data (including relics and specimens) at every federal construction project.	Mitigates potential harm to historic and archaeological resources. Mitigates potential harm to historical and archaeological resources.
Bald Eagle Protection Act of 1969, as amended	86-70; 16 U.S.C. 668	Protects bald and golden eagles.	May make certain coal lands unsuitable for development.
Clean Air Act	95-95; 42 U.S.C. 7401	Establishes requirements for areas failing to attain National Ambient Air Quality Standards (NAAQS). Provides for prevention of significant deterioration of areas where air is cleaner than NAAQS. May require a Federal permit where conflicts with coal development exist. Modifies provisions of the Clean Air Act amendments of 1970 regarding federal facilities, enforcement strategies, coal use impacts, and interstate air pollution.	Limits industrial development within and adjacent to areas exceeding NAAQS and areas preserving clean air quality. Reduces commercial attractiveness of low-sulfur western coal as new source standard changed to percent emissions reduction.
Clean Water Act of 1977	95-217; 33 U.S.C. 1251	Establishes effluent limitations for new and existing industrial discharges into U.S. waters. Sets Limitations for public treatment discharges, with pretreatment by industrial users. Provides mechanism to restore and maintain integrity of the nation's waters.	May reduce development options in areas where anti-degradation policy restricts discharges into high quality waters. Treatment facilities in areas with rapidly expanding infrastructures must meet water quality standards. Effluent standards apply to coal mining point sources.
	323, 325; 33 U.S.C. 1344	Requires a Section 404 permit.	Protects the waters of the United States by controlling dredging and filling.
Endangered Species Act of 1973, as amended	93-205; 16 U.S.C. 1531	Protects endangered and threatened species and critical habitat from federal activities. Requires prior consultation with Fish and Wildlife Service.	May make certain coal lands unsuitable for development.
Fish and Wildlife Coordination Act of 1934	85-624; 16 U.S.C. 661	Requires that wildlife conservation receive equal consideration/coordination with other features of water resource programs throughout the planning and decision-making process.	Mitigates potential federal coal development impacts on water resources and wildlife habitat.

TABLE 1-9 (continued)
FEDERAL LAWS AFFECTING COAL DEVELOPMENT AND ENERGY CONSERVATION

Popular Name	Public Law/U.S. Code Citation	Purpose	Major Relevance
National Historic Preservation Act of 1966, as amended	89-665; 16 U.S.C. 470. Also see A94-429; 16 U.S.C. 1609	Establishes system of classifying properties on or eligible for inclusion on National Register of Historic Places Mandates federal agency consultation with Advisory Council on Historic Preservation and State Historic Preservation Officers.	Requires federal agencies to consider properties listed on or eligible for listing on the National Register of Historic Places before expending any federal funds or issuing a license for any undertaking that would affect such properties and to consult with Advisory Council on Historic Preservation if such properties would be adversely affected. Also established President's Advisory Council on Historic Preservation.
National Environmental Policy Act of 1969	91-90; 42 U.S.C. 4321	Makes environmental protection part of the mandate of every federal agency. Requires EISs for major federal actions with potentially significant impacts.	Provides legislative authority to control energy development on environmental grounds. EIS process must be integral part of coal leasing system.
Mining and Minerals Policy Act of 1970	91-631; 43 U.S.C. 21	Declares congressional minerals policy.	Provides broad, principles for mineral resource development.
Noise Control Act of 1972	92-574; 42 U.S.C. 4901	Requires publication of information on limits of noise required to protect public health and welfare. Preempts local control of railroad equipment and yard noise emissions.	Regulations may be proposed to control coal mining noise disturbances.
Resource Conservation and Recovery Act of 1976	94-580; 42 U.S.C. 6901	Establishes guidelines for collection, transport, separation, recovery, and disposal of solid waste. Creates major federal hazardous waste regulatory program. Provides assistance to establish state or regional solid waste plans.	Mining locations may be affected by EPA regulations governing disposal of coal mining wastes. Coal industry faced with stringent permit requirements if coal wastes are classified as hazardous by EPA.
Rivers and Harbors Act of 1899	320-322, 329; 33 U.S.C. 403	Requires a Section 10 permit.	Protects navigable waters of the United States.
Safe Drinking Water Act of 1977	95-190; 42 U.S.C. 300	Establishes mechanism for National Primary Drinking Water Standards.	EPA conducting study of the impacts of pits, ponds, lagoons, etc. on underground water supplies for public water systems.
Soil and Water Resources Conservation Act of 1977	95-192; 16 U.S.C. 2001	Requires Secretary of Agriculture to appraise information and expertise on conservation and use of soils, plants, and woodlands.	Provides opportunity for expanded data base.
Multiple-Use Sustained Yield Act of 1960	86-519; 16 U.S.C. 528	Requires management of national forests under principles of multiple use so as to produce a sustained yield of products and services.	Mandates land management principles similar to those required under FLPMA
Forest and Rangeland Resources Planning Act of 1974	93-378; 16 U.S.C. 1600-1614	Provides for a comprehensive system of land and resource management planning for National Forest System lands.	Key factor in the Department of the Interior's determination of where coal leasing would occur.
National Forests Management Act of 1976	95-233; 16 U.S.C. 472a	Provides for a comprehensive system of land and resource management planning for National Forest System lands.	Key factor in the Department of the Interior's determination of where coal leasing would occur.
Department of Energy Organization Act of 1977	95-91; 42 U.S.C. 7101	Transfers authority to issue some coal regulations from Department of the Interior to Department of Energy (DOE), including production regulations.	Limits coal management authority exercised by the Department of the Interior.

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TABLE 1-9 (concluded)
FEDERAL LAWS AFFECTING COAL DEVELOPMENT AND ENERGY CONSERVATION

Popular Name	Public Law/U.S. Code Citation	Purpose	Major Relevance
		DOE determines long-term national coal production goals.	Requires program to establish proper coordination mechanisms.
Act of September 28, 1976	94-429; 16 U.S.C. 1908	Provides for regulating mining within and repeals the application of mining laws to, areas of the National Park System and for other purposes.	Requires recognition and protection of nationally significant natural areas as they relate to surface mining.

FEDERAL AND STATE CONSTRAINTS ON COAL MANAGEMENT

The changes mandated by Public Law 97-100 left DOE with no major, direct functional role in the federal coal management program. Although DOE continues to administer programs related to energy development and use, its only direct relationship to the federal coal program involves formal consultation on alternative regional coal leasing levels.

Department of the Interior

Until January 1982, the Department of the Interior's functions and responsibilities for managing federal coal were divided among the Office of Surface Mining Reclamation and Enforcement (OSM), the Conservation Division of the U.S. Geological Survey (USGS), and BLM. At that time, the Secretary of the Interior created on an experimental basis the Minerals Management Service (MMS), which assumed, among other things, all major coal-related functions of the USGS Conservation Division. This organizational structure remained in place until December 3, 1982, when the Secretary, under Secretarial Order No. 3087, consolidated primary onshore mineral operations and leasing functions of the MMS into BLM. That Secretarial order also made permanent the creation of the MMS as the agency responsible for carrying out the mineral leasing revenue collection and distribution and outer continental shelf minerals management functions of the Department.

This organizational structure gives BLM the responsibility for supervising all aspects of leasing and production of federal coal and gives BLM the responsibility to enforce diligent development, assure maximum economic recovery and conservation of mineral resources, and evaluate the economics of mining. The MMS is responsible for rental, royalty, and bonus collection for onshore minerals. Table 1-10 shows the division of functions and responsibilities among Department of the Interior agencies. See Table 1-9 of the 1979 FES (BLM 1979a) for pre-1982 division of coal management responsibilities.

BLM has the main responsibility for implementing and administering the Mineral Leasing Act of 1920, as amended. Under a variety of federal statutes, BLM is also responsible for managing and protecting all surface resources on public lands. BLM can set postmining land use and establish lease bond limits to assure protection of these resources. The Forest Service is responsible for managing and protecting surface resources on National Forest System lands.

Except for surface lands within the National Forest System, BLM prepares the required land use plans or conducts land use analyses where federal interests are not great enough to justify a land use plan. BLM is responsible for conducting the Department's Federal coal management program and consults with surface owners and surface management agencies on lands containing federal coal.

The Office of Surface Mining Reclamation and Enforcement (OSM) within the Department of the Interior implements SMCRA's programs. OSM approves and oversees state programs for surface coal mining and reclamation and for abandoned mine lands. SMCRA provides for the program's main regulatory responsibility to shift to states whose proposed regulatory programs are approved by the Department of the Interior. In states where primacy is not achieved or is revoked, OSM administers a federal program. OSM reviews mine

TABLE 1-10
DIVISION OF FUNCTIONS AND RESPONSIBILITIES OF FEDERAL COAL MANAGEMENT
BETWEEN OSM AND BLM

FUNCTION	PRIME RESPONSIBILITY	JOINT RESPONSIBILITY	IN CONSULTA- TION WITH	CONCURRENCE FROM
<u>PRELEASING FUNCTIONS</u>				
Evaluate coal resources.	BLM	--	--	--
Petition process for designating federal lands unsuitable for all or certain types of surface coal mining.	OSM -Receives petitions -Conducts hearings -Processes petitions	Surface management agency and other state and local agencies.	--	--
Unsuitability review.	BLM -applies criteria in determining suitability. FS -applies criteria in determining unsuitability on NFS lands.	--	OSM and other surface management agencies. FWS, governor, or other appropriate agency.	-- --
Multiple use analysis.	BLM and FS -multiple use screening weighs resource conflicts to determine if leasing should be further considered	--	--	--
Prepare regional site-specific prelease EIS concerning leasing.	BLM (unless other agency is designated as lead agency.	--	OSM, USGS, FWS, surface managing agency, other agencies, and state and local interests.	--
Prepare special lease terms and conditions.	BLM or surface managing agency.	--	OSM (responsibilities under SMCRA to administer protection requirements of act); BLM (responsibilities under MLA). FWS, governors	Forest Service
Act as Secretary's official representative in dealing with lease applicants.	BLM	--	--	--
Surface owner consent.	BLM	--	--	--
<u>POSTLEASING-PREMINING FUNCTIONS</u>				
Prepare recommendations on applications for use of federally owned surface over leased coal for rights not granted in federal coal lease.	BLM	OSM (BLM receives applications).	OSM, FWS, and surface managing agency after permit is approved.	--
Delineation of "permit area."	None until a permit application package is received. Then OSM assumes responsibility with concurrence of BLM.	--	--	BLM
Review of permit application package, approval of permits and major modifications*; lead agency for preparing site-specific EA/EISs and coordinating with other agencies.	OSM	--	BLM, FWS, and surface managing agency for requirements relating to protecting natural resources; responsibilities relating to development, production and resource recovery requirements; and determinations of postmining land use.	BLM, on production and recovery requirements and postmining land use.
Determine reclaimability.	OSM	--	FWS	--
Exploration on leased coal lands outside a permit area.	BLM receives application and supervises operations for all exploration outside a permit area	--	OSM, FWS, and surface managing agency.	--
Responsibility for all non-lessee activity on lease land before operations.	BLM or other surface managing agency.	--	--	--

FEDERAL AND STATE CONSTRAINTS ON COAL MANAGEMENT

TABLE 1-10 (concluded)
DIVISION OF FUNCTIONS AND RESPONSIBILITIES OF FEDERAL COAL MANAGEMENT
BETWEEN OSM AND BLM

FUNCTION	PRIME RESPONSIBILITY	JOINT RESPONSIBILITY	IN CONSULTA- TION WITH	CONCURRENCE FROM
Responsibility for determining performance bond.	OSM	--	BLM or surface managing agency.	--
Exploration on leased coal lands within a permit area before and after beginning of mining.	BLM (before) OSM (after)	--	BLM or surface managing agency.	--
FUNCTIONS AND RESPONSIBILITIES DURING MINING OPERATIONS				
Act as Secretary's representative in dealing with lessees or operators during operations.	OSM/BLM (shared)	BLM oversees production functions; OSM assumes environmental enforcement functions. BLM retains nonmining functions outside the permit area, including rights-of-way and ancillary activities related to mining. BLM coordinates inspection functions with OSM inspections (except BLM inspections outside the permit area). MMS makes royalty audits and other nonfield inspections independently of OSM.	Surface managing agency.	--
Take needed action in emergency environmental situations.	OSM	OSM has primary emergency authority; BLM and MMS have such authority when OSM inspectors cannot take action before significant harm will occur.	Surface managing agency.	--
Conduct inspection before abandonment and specify and approve abandonment procedures.	OSM (main authority to approve abandonment procedures and abandonment of operations).	OSM, BLM, or surface managing agency have abandonment inspection responsibility.	Private surface owner in case of private surface.	BLM or surface managing agency concurrence in approval of compliance, special requirements for protection of natural resources and post-mining land use of affected land. BLM concurrence in compliance with production and coal resource recovery requirements.
Release of performance bond.	OSM	--	--	BLM or surface managing agency concurrence.
Release of lease bond.	BLM	--	--	BLM or surface managing agency concurrence.

BLM = Bureau of Land Management
USGS = U.S. Geological Survey
MMS = Minerals Management Service
FWS = Fish and Wildlife Service

OSM = Office of Surface Mining Reclamation and Enforcement
SMCRA = Surface Mining Control and Reclamation Act
MLA = Mineral Leasing Act of 1920, as amended

*OSM responsibility for permits and inspections may be delegated to a state.

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permit application packages and advises the Assistant Secretary of the Interior, Land and Minerals Management, on the approval or disapproval of the mining plan.

Regulations governing OSM's permanent regulatory program were originally published on March 13, 1979 (44 Federal Register 14902-15463). These regulations, which were revised in 1982-83, establish minimum environmental performance standards for surface mining on both private and federal lands. OSM's regulations also outline permit and performance bonding requirements, provide for the designation of lands unsuitable for all or certain kinds of surface mining, and permit states to assume responsibility for mining on federal lands under cooperative agreements. See OSM's supplemental EIS on revisions to the OSM regulatory program, Proposed Revisions to the Permanent Program Regulations Implementing Section 501(b) of the Surface Mining Control and Reclamation Act of 1977 (OSM 1983) and the Introduction and Background section of the 1979 FES (BLM 1979a) for more discussion of SMCRA and its implementing regulations.

SMCRA provides that where mining occurs on federal lands in a state that has entered into a cooperative agreement with the Department under Section 523 of SMCRA, regulatory responsibility for reclamation requirements of federal coal development will be shared with that state. Both SMCRA and MLA, however, prohibit the Secretary's delegating to the states his responsibility for protecting the Federal Government's proprietary interest in developing federal coal. Under the state-federal cooperative agreements, the states may review and approve applications for mining permits concurrently with the federal review. If the state so desires, the cooperative agreements will also transfer to the state, authority to inspect mines on federal lands and to cite any violations.

MMS has the responsibility to audit leases and to collect all rents, royalties, and bonuses due the Federal Government on the sale and production of federal coal.

Other Department of the Interior agencies with coal-related responsibilities are the U.S. Fish and Wildlife Service, Geological Survey, and Bureau of Mines.

The U.S. Fish and Wildlife Service (FWS) conducts surface mining studies and monitors work related to impacts on wildlife in general and on endangered species in particular. These studies are used to assess and predict the effects of coal-related activities on fish, wildlife, and their habitats on federal, state, and private lands. FWS also oversees protection of migratory birds, including eagles, and of threatened and endangered species and their habitats. FWS also aids in identifying general wildlife situations and significant habitats and recommends wildlife issues that need to be addressed; provides recommendations during land use planning; recommends areas that should be considered unsuitable for mining; provides comments on the adequacy of reclamation procedures relative to fish and wildlife resources; and recommends mine permit stipulation for fish and wildlife protection, mitigation, or enhancement.

The Geological Survey provides technical assistance for hydrologic studies and administers a coal exploratory program that provides maps, local and regional stratigraphy and correlation networks, and coal resource assessments.

FEDERAL AND STATE CONSTRAINTS ON COAL MANAGEMENT

Coal activities of the Bureau of Mines include conducting advanced coal mine health and safety research and demonstration projects on backfilling and subsidence.

Other Federal Agencies With Coal-Related Responsibilities

Table 1-8 of the 1979 FES (BLM 1979a) summarizes relevant coal management functions within the federal structure. Most significant of these functions and responsibilities are the following.

- Under the Federal Coal Leasing Amendments Act (FCLAA), the Secretary of Agriculture must consent to federal leases under Forest Service jurisdiction and may require terms and conditions to be added to the lease to protect environmental values.
- The Department of Justice must review lease proposals to ensure compliance with antitrust laws.

MAJOR FEDERAL AND STATE LAWS MITIGATING COAL-RELATED IMPACTS

This section reviews the major laws and regulations that control the development of federal coal resources, placing the main emphasis on laws that directly control leasing and mining. Other authorities are cited in less detail to provide a perspective on coal development and related activities.

Mineral Leasing Act of 1920 (MLA) and Federal Coal Leasing Amendments Act of 1976 (FCLAA)

The MLA is the statute that authorizes the Department to issue federal coal leases and requires the Department to manage those leases in accordance with its provisions. MLA, both before and after enactment of FCLAA, gives the Secretary of the Interior considerable discretion in formulating and including stipulations for federal coal leases, including stipulations designed to protect other resources and to mitigate environmental impacts.

In FCLAA, Congress significantly changed the coal leasing process by eliminating preference right leasing and requiring completion of comprehensive land use plans before leasing can occur. FCLAA also established diligent development requirements and minimum royalty rates for surface mined coal, authorized the formation of logical mining units, established exploration licenses, and required the Department of Justice to review leases before they are issued to ensure compliance with the antitrust laws. FCLAA also allows a reasonable number of leasing tracts to be set aside for sale to public bodies that produce electricity for use by their member or customers.

Federal Land Policy and Management Act (FLPMA)

Enacted in October 1976, the Federal Land Policy and Management Act (FLPMA) provides for the use and management of the federally owned lands administered by the Secretary of the Interior through BLM. Title II of FLPMA provides BLM with a statutory mandate for land use planning for public lands. In the development of land use plans, BLM must

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- apply the principles of multiple use and sustained yield;
- give priority to the protection of areas of critical environmental concern (such as historic, cultural, or scenic values and fish and wildlife resources);
- consider present as well as future uses of public lands; and
- coordinate planning with that of federal, state, and local agencies.

FLPMA addresses the distribution of mineral revenues by states and local governments by restating the increase of the state's share of the funds received by the Federal Government for developing leasable minerals on federal land from 37.5 to 50 percent, which had first been enacted in the Federal Coal Leasing Amendments Act (FCLAA).

FLPMA also requires the Department of the Interior to review all BLM lands for potential wilderness designation. The major steps in the process are inventory, identification of wilderness study areas, presidential recommendations, and formal congressional designation. Proposed procedures and requirements for the Department of the Interior's management were published in 44 Federal Register 2699 (1979).

Surface Mining Control and Reclamation Act (SMCRA)

Congress enacted the Surface Mining Control and Reclamation Act (SMCRA) (Public Law 95-87, 30 U.S.C. 1201 et seq.) in August 1977. SMCRA established a detailed national program for addressing the environmental effects of coal mining. Of particular importance are SMCRA's requirements that (1) surface coal mining be conducted in accordance with environmental protection performance standards (Sec. 515), (2) federal lands be reviewed to determine if they are unsuitable for all or certain types of surface coal mining (Section 522), and (3) a petition process be established to designate lands as unsuitable for all or certain types of surface coal mining (Section 522).

The performance standards of Section 515 are minimum standards that apply to mining and reclamation. Under SMCRA, the states may impose more stringent standards. SMCRA requires operators to post a performance bond to ensure that the mined land is reclaimed. Among other things, the standards require the following:

- o restoring disturbed land to original or better conditions,
- o restoring land to the approximate original contour of the land surface,
- o stabilizing and protecting all surface areas,
- o protecting prime farmlands through specific reclamation techniques,
- o reducing disturbances to the existing hydrologic balance, and
- o restricting mining on steep slopes.

The Secretary of the Interior determines unsuitability of federal lands for all or certain types of coal mining, according to Section 522 of SMCRA, and states have authority to determine unsuitability on nonfederal lands.

Interested parties may petition the permitting agency (OSM for federal lands or federal lands programs or a state regulatory agency for nonfederal lands in states with approved programs) pursuant to Section 522 to have areas designated unsuitable. The petition must be granted if reclamation of

FEDERAL AND STATE CONSTRAINTS ON COAL MANAGEMENT

disturbed lands is determined not to be technologically or economically feasible. Unsuitability status may also be granted if, as a result of the petition, it is determined that mining would have one of the following effects:

- conflict with existing state and local land use plans,
- affect fragile or historic lands in which such operations could result in significant damage to important historic, cultural, scientific, and esthetic values and natural systems,
- result in substantial loss or reduction in the long-range productivity of the water supply of or including aquifers or aquifer recharge areas or the production of food or fiber products, or
- substantially endanger life and property in natural hazard lands--areas subject to frequent flooding and areas of unstable geology.

To accomplish its goals, SMCRA mandated state programs for surface coal mines and for surface effects of underground coal mines. Most western states have revised their programs to comply with SMCRA, have received approval of their permanent regulatory programs, and have qualified for assuming primary regulatory jurisdiction over surface mining and reclamation.

States (with approved permits) that have entered into a cooperative agreement with the Department of the Interior also have the authority to regulate mining through issuance of permits on federal lands within their boundaries. The Secretary of the Interior, however, retains the authority to approve or disapprove mining plans on federal lands and to designate federal lands unsuitable for mining.

Each application for a surface coal mining and reclamation permit must include detailed information on the type and method of coal mining and the engineering techniques and equipment to be used; the probable hydrologic consequences of the mining and reclamation, both on and off the mine site; any manmade features or significant archaeological sites that may be affected by mining; the geological and physical characteristics of the coal, including a chemical analysis of potentially acid- or toxic-forming strata; a soil survey of potential prime farmland; and the reclamation plan.

The probable hydrologic consequences of mining and reclamation must be determined. Enough data must be collected to enable the regulatory agency to assess the probable cumulative impacts on hydrology and water availability of all mining in the area.

The reclamation plan must describe the condition of the land before mining, including its existing and potential land uses, its productivity, and its average yield of food, fiber, forage, or wood products under optimum management. The plan also must specify the proposed postmining land use and describe in detail how this use will be achieved, including the engineering techniques and equipment to be used, the cost per acre of reclamation, and a detailed timetable for accomplishing reclamation. In addition, the plan must describe the means of compliance with applicable air and water quality and health and safety regulations.

Clean Air Act

The Clean Air Act established a national system of air quality regulation and gave the Environmental Protection Agency (EPA) the responsibility for implementing federal regulations and standards. States were mandated to devise state implementation plans. In the absence of state action, federal intervention is required.

The central feature of the 1970 Clean Air Act Amendments is the requirement that EPA issue National Ambient Air Quality Standards (NAAQS). The NAAQS define air quality by the ambient concentration of pollutants.

The 1980 amendments provide for two types of ambient air quality standards: (1) primary standards designed to protect human health and (2) secondary standards designed to safeguard public welfare.

EPA has identified six pollutants as having potentially adverse effects on public health and welfare and has established primary and secondary NAAQS for each. These pollutants are sulfur oxides, particulate matter, nitrogen dioxide, photochemical oxidants (from the combination of hydrocarbons and ozone), carbon monoxide, and lead.

To enable pollution control programs to be managed locally, 247 air quality control regions (AQCRs) were designated. Each AQCR is classified as to whether it meets national standards. The classification of an area with respect to ambient air quality has important consequences. Regions that EPA finds to be in non-attainment status are subject to a particular set of restrictions (offset requirements) under the act. Nondegradation regions (where air is cleaner than the standards), are subject to a different set of regulations, which are intended for Prevention of Significant Deterioration (PSD). In 1974, PSD regulations were issued and incorporated into all state implementation plans. In 1977, these regulations were incorporated into the Clean Air Act with some changes.

In general, the PSD program divides clean air areas into three classes. Certain national parks, wilderness areas, and monuments that existed when the Clean Air Act was passed were immediately designated as Class I areas. Class I areas are subject to the lowest PSD increments and are mainly valued for their scenic beauty. All other clean air areas were designated Class II. In Class II areas, more air pollution and moderate industrial growth are allowed. Individual states or Indian tribal governments can redesignate some Class II areas as Class III areas where major industrial development is foreseen. In Class III areas, air pollution up to half the level of the secondary standards is permitted. The states or Indian tribes also can redesignate Class II areas as Class I. Either type of redesignation is subject to EPA approval and to hearings and consultations with the managers of affected federal lands or states in the case of Indian action.

All state implementation plans must specify emission limitations and other standards for each class area. Maximum allowable concentrations for a specified period of exposure must not exceed the applicable primary or secondary NAAQS, whichever is stricter.

FEDERAL AND STATE CONSTRAINTS ON COAL MANAGEMENT

To obtain a permit for a facility in a nondegradation area, a special preconstruction review must show that the facility will not pollute the air in excess of NAAQS or PSD standards more than once per year in any air quality control region. Best available control technology (BACT) must be used for all pollutants regulated by the act, and the effects of the emissions from the facility on the ambient air quality that could result from any growth associated with the facility must also be analyzed. The PSD impact projections are cumulative for the region of the source. More assessments of the effects on visibility in Class I areas and on air quality-related values must be included in the PSD review.

New source review for PSD permits under the Clean Air Act is now required for all projects that fall within the 30 industrial categories on EPA's list (28 of which were specified by the Clean Air Act itself) and emit at least 100 tons per year of any air pollutant regulated under the Clean Air Act. Uncategorized sources are also subject to review if they emit more than 250 tons per year unless they exceed this level only because of fugitive emissions. On October 26, 1984, EPA reaffirmed its regulation that includes fugitive emissions in the determination of whether a listed source needs a PSD permit. At the same time, EPA also proposed to add surface coal mines to the list of 30 industrial categories.

Almost all surface coal mines in the West emit more than 100 tons per year because of unpaved haul roads, draglines, graders, scrapers, blasting, coal loading and storage, and other functions of surface mining. Thus, if this proposal is made final, most new mines would be subject to new source review for PSD permits.

On March 20, 1984, EPA also proposed changing the primary (health) NAAQS from a total suspended particulate (tsp) to a "PM-10" (diameter of 10 microns or less) standard. Most particles from surface mine fugitive dust exceed that size, but surface coal mines would also have to meet secondary tsp standards. The ultimate effects on surface coal mining are under study. When the studies are completed, EPA may decide not to list surface coal mines because the costs could outweigh the benefits, or EPA may decide to sublist only mines which could affect Class I areas or only those which could affect Class I and Class II areas. EPA is evaluating possible effects of this proposal as part of the rulemaking process.

Clean Water Act

OSM and EPA are the main federal agencies responsible for review of water resource impacts of coal mining. Water resource data is a major component of a mine permit application, and compliance with water resource performance standards must be shown before an application can be approved. Section 515(b) of SMCRA establishes performance standards for water resource impacts, including

- control of discharges from mining and reclamation,
- control of erosion and attendant water pollution,
- impoundment of water on mining sites, and

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- protection of ground water recharge capacity.

Discharges from mining and reclamation are regulated by OSM, the state regulatory authority, and the agency responsible for implementing the Clean Water Act in each state. The Clean Water Act requires mines to obtain discharge permits and to comply with EPA and state water quality standards. The Clean Water Act permit system applies during the active phase of mining until release of the bond under SMCRA. Any later discharge also requires a permit. Effluent levels for postmining permits are established on a case-by-case basis rather than through standardized guidelines. SMCRA regulates all water discharged as a result of coal mining and reclamation. Effluent limitations set by OSM are the same as those adopted by EPA.

Any lessee proposing to discharge dredge or fill material into a water of the United States or adjacent wetlands will be required to obtain a Department of the Army permit under Section 404 of the Clean Water Act. In addition, OSM regulations require sediment control measures using the "best technology currently available" and minimum standards for permanent and temporary impoundments as part of reclamation. Permanent impoundments may be built only if size and design criteria will ensure stability, safety, and access. SMCRA also requires that the recharge capability of the mined area be restored to the approximate premining condition and that mine operators monitor ground and surface water quantity and quality in the permit and surrounding area before, during, and after mining.

Mineral Leasing Act for Acquired Lands

The Mineral Leasing Act for Acquired Lands governs leasing on federally acquired lands for coal as well as other minerals covered by the Mineral Leasing Act. The act requires the consent of the head of the federal agency having administrative jurisdiction over the lands before BLM can lease coal. The Federal Coal Leasing Amendments Act grants similar consent authority to the surface managing agency with regard to nonacquired lands. Otherwise, leasing and operations provisions are the same as those for public domain lands.

State Policies, Constraints, and Mitigation

State policies and legislative actions may influence the development of federal coal. This section does not attempt to compile a comprehensive list of laws or permits but to show the main controls on coal development established by state legislation. Table 1-6 in the 1979 FES (BLM 1979a) lists some of these laws and briefly states their purpose and the state office or agency responsible for their administration and enforcement.

Since the 1979 FES, New Mexico has repealed its version of the National Environmental Policy Act. In 1981, Colorado passed a hazardous waste act, which is administered by the Colorado Department of Health. New York has recently enacted an acid rain statute to reduce sulfur emissions within the state; other northeastern states may pass similar laws. The impact of such state or federal laws is difficult to predict. Such laws could result in installation of stack gas scrubbers to reduce emissions, purchase of more western low-sulfur coal, or the development of innovative coal preparation and combustion technology.

FEDERAL AND STATE CONSTRAINTS ON COAL MANAGEMENT

Table 1-11 lists the main coal mining-related laws of states within the six coal regions, briefly states their purpose, and identifies the state office or agency responsible for their administration and enforcement. The laws listed in this table are the minimum mitigation to which the Department of the Interior is committed. The Department considers additional mitigation measures on a case-by-case basis through environmental analysis and information from the public. State governors may also propose more measures during the Secretary of the Interior's consultation (for regional leasing) or the BLM state director's consultation (for lease by application and preference right lease applications). If the area to be leased is managed by a surface management agency outside the Department (such as the Forest Service or the U.S. Army), that surface management agency may also develop protective stipulations for the nonmineral resources on the tract.

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TABLE 1-11
STATE LEGISLATION AFFECTING COAL DEVELOPMENT AND ENERGY CONSERVATION

Lead State Agency	Legislation	Purpose	Major Relevance
NORTH DAKOTA			
North Dakota State Department of Health	North Dakota Air Pollution Control Act	Establishes and administers air quality standards.	Requires plans to issue permits to build, install, modify, use, or operate any air contaminant source.
	Solid Waste Management and Land Protection Act	Establishes solid waste disposal standards.	Required to approve or disapprove permits for solid waste disposal plans. Also enforces North Dakota New Source Performance Standards.
Environmental Health and Engineering Services	North Dakota Water Pollution Control Act	Establishes and administers water quality standards.	Responsible for establishing and administering standards to prevent or abate pollution of state waters.
Environmental Control	North Dakota Century Code (NDCC 23-25)	Protects air quality.	Provides means of preventing significant deterioration of state air quality as related to energy development. Involves review of application for permit to build or operate facilities and monitoring of facilities in operation.
	NDCC 23-29	Manages solid waste disposal.	Requires permits for solid waste disposal facilities.
	NDCC 61-28	Protects water quality.	Responsible for establishing and administering standards to prevent or abate pollution of state waters. Requires application for and receipt of a permit to discharge mine water.
North Dakota State Water Commission	NDCC 61-04	Administers water use.	Permits must be secured for all appropriations of water for industrial uses greater than 5,000 acre-feet.
	NDCC 61-02 NDCC 61-16	Administers water use.	Permits must be obtained with the approval of the local water management district for building of dikes or dams for water storage greater than 12.5 acre-feet.
North Dakota State Industrial Commission - State Geologist	NDCC 38-121	Provides for data recovery.	Requires a permit for coal and requires the filing of coal exploration data with the State Geologist
North Dakota State Engineer	NDCC 61-04	Administers water use.	Permits must be secured for all appropriations of water for industrial use less than 5,000 acre-feet.
	NDCC 61-01	Administers water use.	Permits must be obtained with the approval of the local water management district for drainage.
North Dakota Land Development	NDCC 15-05	Protects and administers coal resources.	Responsible for leasing state coal. Also authorized to coordinate leasing with federal leasing to prevent speculation.
North Dakota Public Services Commission	North Dakota Surface Owners Protection Act NDCC 38-18	Protects surface owner rights.	Requires approval by surface owners before permitting mining plans. Issues permits for surface mining.
	NDCC 38-14	Protects surface owner rights.	Requires application for and receipt of a permit for coal surface mining and reclamation.

FEDERAL AND STATE CONSTRAINTS ON COAL MANAGEMENT

TABLE 1-11 (continued)
STATE LEGISLATION AFFECTING COAL DEVELOPMENT AND ENERGY CONSERVATION

Lead State Agency	Legislation	Purpose	Major Relevance
NORTH DAKOTA (continued)			
	NDCC 49-22	Protects surface owner rights.	Regulates siting of conversion and transmission facilities through the North Dakota Facility Siting Act. Requires application for and receipt of (1) certificate of site compatibility (2) certificate of corridor compatibility and (3) route permit for transmission facility within the corridor.
North Dakota Coal Development Impact Office	House Bill 1262, Section 15	Mitigates coal-related impacts.	Authorized to issue state funds to aid areas affected by coal development.
	NDCC 57-62		Authorized to issue financial grants to affected taxing districts that show extraordinary expenditures caused by coal development and related growth.
MONTANA			
Department of Natural Resources and Conservation	Montana Major Facility Siting Act	Provides for review and regulation of major facilities.	Vests in the department the authority to require and review long-range planning by certain utilities, to give approval to energy generation and conversion plantsites and associated facilities, and to require preconstruction certification of such facilities.
Environmental Quality Council	Montana Environmental Policy Act	Declares a state policy to encourage productive and enjoyable harmony between man and his environment.	To promote efforts to prevent or eliminate damage to the environment and biosphere and stimulate human health and welfare; to enrich the understanding of the ecological systems and natural resources important to the state; and to establish an environmental quality council.
Montana Department of Health and Environmental Sciences	Montana Water Pollution Control Law Montana Water Quality Criteria Montana Pollutant Discharge Elimination System Permit Montana Solid Waste Management Act Montana Refuse Disposal Regulations Montana Clean Air Act Montana Air Quality Regulations	Protects the environment.	All these laws and regulations are designed to reduce contamination and pollution and maintain the quality of the environment by establishing standards and maximum amounts of deviation of pollutant substances.
Montana Department of State Lands		Protects resources and the environment.	The Department of State Lands prepares a detailed site-specific EIS for all coal mine permit applications and may grant or deny surface mining permits.
	Montana Strip and Underground Mine Reclamation Act	Protects resources and the environment.	The act and promulgated rules contain detailed standards for the method of mining, blasting, subsidence stabilization, water control, backfilling, grading, highwall reduction, topsoiling, and reclaiming lands affected by proposed mining.

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TABLE 1-11 (continued)
STATE LEGISLATION AFFECTING COAL DEVELOPMENT AND ENERGY CONSERVATION

Lead State Agency	Legislation	Purpose	Major Relevance
MONTANA (continued)			
	Strip Mined Coal Conservation Act	Protects resources and the environment.	The act's intent is to prevent waste of marketable coal.
	State Antiquities Act Chapter 25 of Title 81, R.C.M. 1947	Protects resources and the environment.	Administered by the Department of State Lands and the Board of Land Commissioners, this act provides for the registration and protection of historic, prehistoric, archaeologic, paleontologic, scientific, or cultural sites and objects on state lands.
WYOMING			
Wyoming Department of Environmental Quality --Land Quality Division --Water Quality Division --Air Quality Division	Wyoming Environmental Quality Act (W.S. 35-11-301) --Land Quality Rules and Regulations, 1975 --Water Quality Standard for Wyoming, 1973 --Wyoming Ambient Air Quality Regulations --Solid Waste Management Rules and Regulations, 1975	Protects land, air, and water quality.	Has authority relating to air quality, solid wastes, water quality, mining, and mine-land reclamation. The Land Quality Division issues permits and licenses to mine upon approval of a mining and reclamation plan. Mined-land reclamation provisions of the mining and reclamation plan are administered and enforced by the Land Quality Division. The Air Quality Division issues permits to build and operate coal mines after approval of applications with regard to plans for monitoring and controlling air contaminants. The Water Quality Division issues permits to build settling ponds and waste water systems and issues NPDES* permits for discharging waste water. The Solid Waste Division issues construction fill permits and industrial waste facility permits for solid waste disposal during building and operation of coal mines.
Wyoming Industrial Siting Administration	Wyoming Industrial Development Information and Siting Act, 1975 as amended 1977 & 1981 W.S. 35-12-101 through 35-12-121	Protects Wyoming's environment.	Requires furnishing extensive information and a state permit before certain facilities can be built. Affects such developments as gasification or electric generation proposals. Control does not apply to public properties except as provided by law.
Commissioner of Public Lands	Title 36 Wyoming Statute, 1977	Protects and manages state lands.	Commissioner is responsible for administering, leasing and managing state lands. Utility lines, roads, and railroad spurs crossing state land require easements from the Commissioner.
Land Use Administration	Land Use Planning Act	Protects and manages state lands.	The act requires county land use plans, which could conflict with or modify some energy development proposals.
Wyoming State Engineer	Wyoming Industrial Department Information and Siting Act W.S. 35-12-107 W.S. 41-4, 4-10, 41-26 to 41-46, and 41-121 to 41-147	Administers and protects state waters.	Any storage, impoundment or use of surface or ground water for mining and coal processing requires a permit from the State Engineer. Water pipelines and diversion structures that could affect other users also require a permit.

FEDERAL AND STATE CONSTRAINTS ON COAL MANAGEMENT

TABLE 1-11 (continued)
STATE LEGISLATION AFFECTING COAL DEVELOPMENT AND ENERGY CONSERVATION

Lead State Agency	Legislation	Purpose	Major Relevance
COLORADO			
Colorado Department of Health --Water Quality Control Commission	Colorado Water Quality Control Act	Establishes and administers water quality standards in state waters.	Requires site review and permit issuance for projects involving water, sewage, and waste disposal. Establishes criteria for erosion control dams.
--Air Quality Control Commission	Colorado Air Pollution Control Act	Establishes and administers air quality standards.	Requires mines to use dust preventive measures in all mining procedures, including construction.
State Land Use Commission	House Bill 1041 Colorado Land Use Act of 1974	Protects the utility, value, and future of all lands within the state, including the public domain and privately owned land.	Local governments have the duty to identify, designate, and administer such areas and activities of state interest, including mineral resource areas and mining.
	Colorado Antiquities Act of 1973	Provides for the protection of historical, natural, or archaeological values and for data recovery.	Establishes areas containing or having significant impacts on historical, natural, or archaeological resources as being of state interest. BLM must coordinate with State Historic Preservation Officer before approving mining plans or rights-of-way.
Colorado Department of Natural Resources Division of Mines	Mining Employees Safety Act	Provides for mine safety.	Monitors mine safety practices.
Mined Land Reclamation Board	Colorado Mined Land Reclamation Act of 1976	Provides for the reclamation of land subjected to surface disturbance by mining, thereby conserving natural resources, protecting wildlife and aquatic resources, and establishing recreation, home, and industrial sites to protect and perpetuate the taxable value of property.	Mine operation must obtain a permit. A plan of operations must be submitted, which includes a reclamation section. The board must hold public hearings and the involved county must approve issuance of a permit.
	Colorado Mined Land Reclamation Act of 1979	Mitigates impacts, assures reclamation, perpetuates existing regulations, and ensures that Colorado can carry out the intent and purposes of SMCEA.	Provides strict timeframes for administering permitting provisions. Performance standards require restoring disturbed lands to a condition equal to or better than before mining; returning disturbed lands to the approximate original contour; stabilizing and protecting all surface areas during and after mining; reducing disturbances to the prevailing hydrologic balance; and protecting alluvial valley floors. In addition, the Colorado act applies to "surface operations and surface impacts incident to an underground coal mine." Underground operations must comply with most of the detailed performance standards for surface mines even though special performance standards, such as preventing material damage by subsidence, are developed for some aspects of underground operations (Colorado Revised Statutes 1979).

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TABLE 1-11 (continued)
STATE LEGISLATION AFFECTING COAL DEVELOPMENT AND ENERGY CONSERVATION

Lead State Agency	Legislation	Purpose	Major Relevance
UTAH			
Air Conservation Committee	Utah Air Conservation Regulations Utah Code Annotated Section 26-13-6	Protects air quality.	Approves notice of intent to build sources of air pollution, including Prevention of Significant Deterioration (PSD) permit.
Utah Bureau of Water Quality	Water Quality Standards for Utah Utah Code Annotated 26-11-8	Protects water quality.	Important prescribed standards include those specifying maximum permissible concentrations of dissolved solids, minimum permissible concentrations of dissolved oxygen, and permissible temperatures of state waters. Also establishes antidegradation policy and effluent standards.
State Historic Preservation Officer	Utah State Antiquities Act (RB 366, 1977) Utah Code Annotated 63-18-25	Protects historical, natural, paleontological, or archaeological values and provides for data recovery.	Requires a paleontological survey before mining can begin. No mining or rights-of-way will be approved until the surface management agency has coordinated professional cultural resource (including archaeological, architectural, and historical remains) surveys with the State Historic Preservation Officer.
Division of Oil, Gas, and Mining	Utah Code Annotated 40-8-13 (Supp. 1981); Rule M-3	Protects surface resources.	Issues notices of intention to begin exploratory drilling and mining. Could make some areas unsuitable for mining. Requires a reclamation plan.
Department of Community and Economic Development	Utah Code Annotated 63-51-10 (Supp. 1981) (S.B. 170)	Mitigates socioeconomic impacts.	Requires the submittal of a financial impact statement and a plan to mitigate socioeconomic impacts.
NEW MEXICO			
New Mexico Environmental Improvement Division	Environmental Improvement Act of 1971 NMSA 12-12 through 14	Establishes responsibilities for environmental management and consumer protection programs.	Programs include food protection, water supply, and pollution as provided in the Water Quality Act; liquid and solid wastes; air quality management as provided in the Air Quality Act; radiation control; noise control; nuisance abatement vector control; occupational health and safety; sanitation of public buildings.
	Air Quality Control Regulation 201	Establishes and enforces regulations to prevent or abate air pollution.	Requires submission of plans, specifications, and other relevant information before issuing a permit for the building or modification of any new source of air contamination.
	New Mexico Air Quality Standards and Regulations, Section 672	Establishes and enforces regulations to prevent or abate air pollution.	Requires that coal handling machinery be equipped and haul roads be sprayed to prevent particulate matter from becoming airborne.
New Mexico Coal Surface Mining Commission	New Mexico Surface Mining Act of 1979, Rule 80-1, Part 20	Establishes and enforces surface mining regulations.	Requires that a full range of coal mining protection be established on affected areas and that diverse and permanent vegetation cover capable of self-regeneration at least equal in extent to natural vegetation be established on affected areas.

FEDERAL AND STATE CONSTRAINTS ON COAL MANAGEMENT

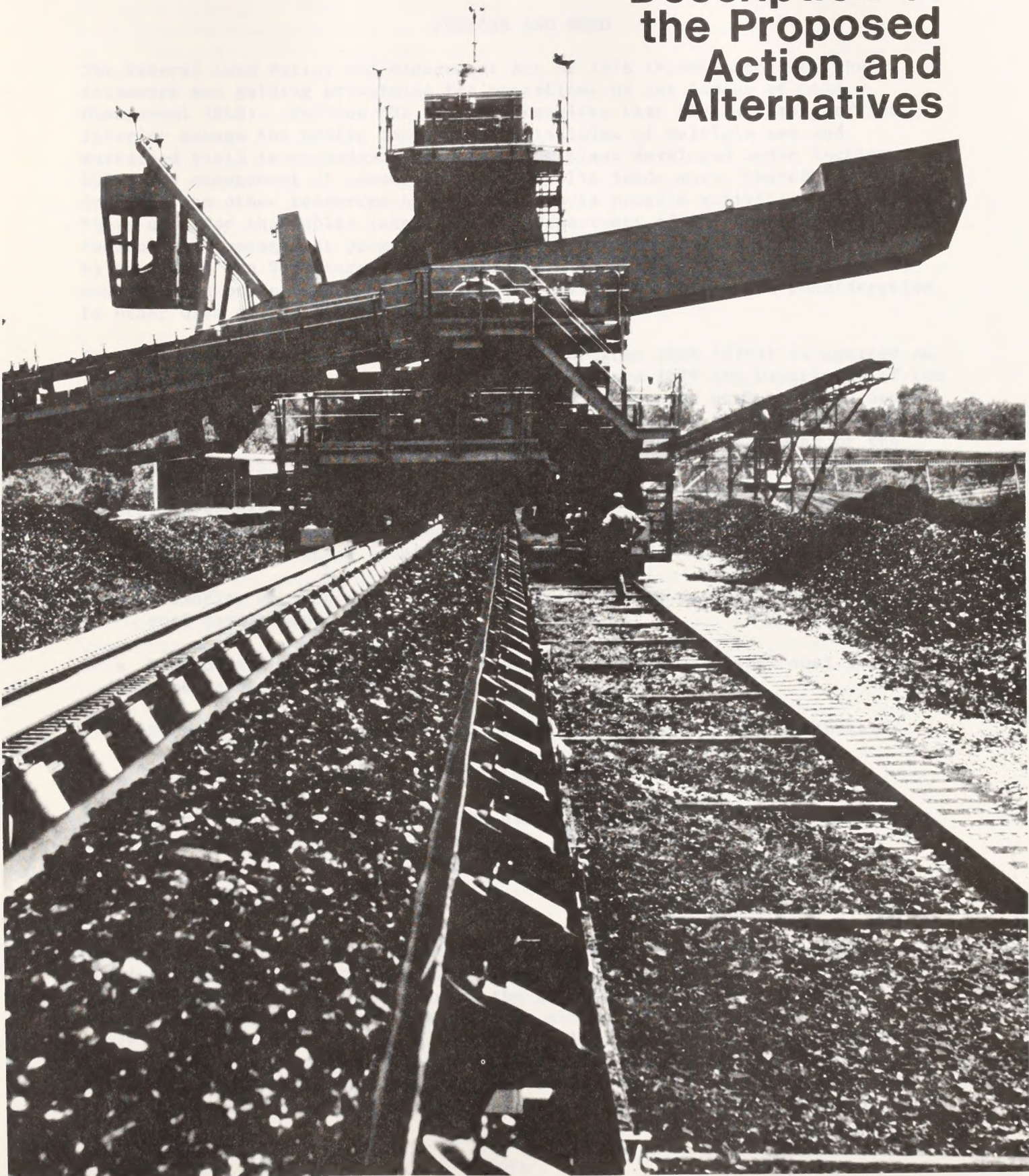
TABLE 1-11 (concluded)
STATE LEGISLATION AFFECTING COAL DEVELOPMENT AND ENERGY CONSERVATION

Lead State Agency	Legislation	Purpose	Major Relevance
NEW MEXICO (continued)			
	Rule 80-1, Part 20-41	Establishes and enforces surface mining regulations.	Requires that surface coal mining be planned and conducted to reduce adverse changes in water quality and quantity.
	State of New Mexico Senate Memorial 31	Provides for the recovery of paleontologic data.	Requires mines on state lands to notify the State of New Mexico, Dept. of Finance and Administration, Office of Cultural Affairs, if important fossils are found.
State Game Commission	Regulation 563	Provides for protecting state endangered species and subspecies.	May make certain coal lands off-limits to development.
State Historic Preservation Officer	Cultural Properties Act, as amended, 1969	Provides for protecting historical values and recovering of data.	Regulates antiquities excavation and collection and protects historical values on public, Indian trust, and state lands.
Water Quality Control Commission	Water Quality Control Act.	Protects surface and ground water.	Establishes and administers a comprehensive water quality program and develops a continuing planning process, including adoption of water quality standards as a guide to water pollution control. Also certifies permits to the U.S. Environmental Protection Agency for the discharge of any water contaminant either directly or indirectly into water. Has ground water regulations for strip or tunnel mines.
State Engineer of New Mexico	N.M. State Annotated (1953 Compil.), Section 72-2-1	Provides for the general supervision, measurement, appropriation, and distribution of state waters. Responsible for the safety of all state and private dams and for providing guidelines to counties for formulating local regulations.	Any person drilling a mine lode discovery hole or mine drill hole to a depth of 10 feet more, and finds a water body or water-bearing stratum must report it to the State Engineer. Any person wanting to engage in mine dewatering in a declared underground water basin must apply to the State Engineer for a permit.
ALABAMA			
The Alabama Department of Environmental Management	Alabama Law (Reg. Session 1982) ACT No. 82-612 S.47-Mr. White & Mr. Holmes CODE OF ALABAMA: Title 22, Chapter 22 Pollution Discharge Elimination System Permit Alabama Air Pollution Control Act of 1971 Solid Waste Disposal Act of 1969. Hazardous Waste Management Act of 1978	Provides for the management of state resources in a manner compatible with the environment and the health and welfare of state residents.	All laws and regulations designed to reduce contamination and pollution and maintain the quality of the environment by setting standards and maximum amounts of deviation of pollutant substances.
Surface Mining and Reclamation Commission	Surface Mining Control and Reclamation Act Of 1977, as Revised	Regulates coal mining.	Regulations pertaining to water flow and quantity; top soil conservation and replacement; high wall reduction; burying or neutralizing of toxic waste; revegetation for beneficial use, and land use planning.

*NPDES = National Pollutant Discharge Elimination System

CHAPTER 2

Description of the Proposed Action and Alternatives



PURPOSE AND NEED

The Federal Land Policy and Management Act of 1976 (FLPMA) provides the framework and guiding principles for operations of the Bureau of Land Management (BLM). Section 302 of FLPMA requires that the Secretary of the Interior manage the public lands under principles of multiple use and sustained yield in accordance with land use plans developed under Section 202. Any management of resources on the public lands must, therefore, consider the other resources on public lands in program activities and balance those uses for the public interest. The Department of the Interior believes a federal coal management program can meet the mandate of Section 302 of FLPMA by providing the Secretary of the Interior with a framework within which to consider the proper management of federal coal while giving due consideration to other uses of the public lands.

The 1979 FES on the federal coal management program (BLM 1979a) recognized an immediate need for new federal coal leasing. Since 1979 the Department of the Interior has issued leases for about 2.8 billion tons of coal, and the need for more leasing now is not as urgent as it was believed to be in 1979. The period between the beginning of the leasing process and development of the coal, however, is likely to be 10 years or more. The Department of the Interior believes in the importance of continuing a program through which the Federal Government can (1) identify future leasing needs and (2) respond by offering coal for lease in a timely manner to capture the benefits derived from such leasing. These benefits are discussed under the following headings:

- Promoting more economically and environmentally desirable patterns of coal development.
- Providing the opportunity for industry to acquire federal coal leases as a means of addressing the Nation's energy needs.
- Meeting legal requirements and providing administrative advantages.
- Promoting competition within the coal industry.
- Supporting other factors in the national interest, including generating revenues for the states and the U.S. Treasury.

PATTERNS OF DEVELOPMENT

The Federal Government owns about 60 percent of the western coal reserve base and indirectly affects the use of at least 20 percent more due to fragmented land ownership patterns. Because of the government's dominant reserve holdings in the key western coal regions, mines of insufficient size and inefficient configuration could result if only nonfederal coal were mined. For example, in areas of checkerboard ownership, development would occur in alternating nonfederal sections and five-section nonfederal blocks centered on state sections. If such development occurred, efficient mining patterns would

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

be distorted, mining costs would increase, otherwise recoverable coal would be left unmined, and the most efficient or environmentally desirable patterns of coal mining could not be achieved.

Without procedures for federal coal leasing, unleased federal parcels lying in the path of active mines could be bypassed at a cost to consumers and the government. Such operations would then forgo the opportunity to produce relatively low-cost coal, and the coal parcels bypassed would generally be too small to be mined independently at a later date.

Without the opportunity to lease federal coal, some existing mines would have to shut down because they could not obtain the coal needed to continue operations and fulfill contracts. The BLM examined the progression of existing mines to ascertain the impact of a policy of no federal coal leasing. According to this survey, 36 mines in the five Western regions will need 160 million tons of federal coal reserves to maintain production levels or prevent coal bypass through the year 1996. The Department of the Interior believes it is in the public interest to maintain a stable and orderly coal mining industry to avoid local community dislocations.

The Department expects that future federal leasing could preclude development on some existing leases. Leases dating before the first coal leasing moratorium in May 1971 were issued with little or no attention to land use planning and environmental considerations. Shifting coal development from the sites of these existing leases to future federal lease sites selected through a process of comprehensive planning and environmental screening could foster economically and environmentally improved development patterns.

Interregional and intraregional shifts in coal development could result from a policy of no future federal coal leasing. The extent of such shifts would depend on site-specific considerations and the particular requirements of existing and proposed mines. BLM, however, has projected some interregional shifting using forecasts of the Department of Energy's National Coal Model (NCM) (see Chapter 3). The resulting altered patterns of coal development are summarized in Chapters 3, 4, and 5.

Generally, without continued federal coal leasing (No-Action Alternative), BLM estimates that the Powder River Region and the Utah portion of the Uinta-Southwestern Utah Region would have the greatest potential for intraregional and interregional shifting of production. This shifting would represent a departure from the most economically optimal production patterns. At the high production level, 26 million tons of coal per year that would be mined with further federal coal leasing in the Wyoming portion of the Powder River Region would shift mostly to the Montana portion of the Powder River Region. Some amounts (less than 5 million tons annually) would also be spread out to Midwestern and other Western regions.

At virtually every production level and every target year from 1990-2000, the Utah portion of Uinta-Southwestern Utah Region would be restricted by capacity without further federal leasing. Production would shift mostly to other Western regions, but some production would shift to the East and Midwest. The demand for Uinta-Southwestern Utah coal would depend somewhat upon more leasing because new powerplants in the West will be designed for lower heat

PURPOSE AND NEED

coal if doubt exists as to supply from the Uinta-Southwestern Utah Region. Some of the modeled demand that the Uinta-Southwestern Utah Region is meeting is for exports. This demand could readily shift to the East or to other countries.

In 1990, supply of high quality coal from the Wyoming portion of the Green River-Hams Fork Region would be slightly constrained below demand. Even though overall capacity would be sufficient, production forecasts for 1995 and 2000 show that less coal could be mined under the No New Federal Leasing Alternative than under an alternative program that allows new leasing.

The other regions would not face major problems, but the margin in the Fort Union Region could be tight, depending on the outcome of a currently operating mine that may not meet the production requirements of Section 3 of the Federal Coal Leasing Amendments Act (FCLAA) on federal leases.

ADDRESSING THE NATION'S ENERGY NEEDS

A critical point expressed in the 1979 FES (BLM 1979a) was the need to lease federal coal to avoid a projected shortage in the national coal supply. Later events have dispelled concerns of a national shortage, marking the major shift in the program's emphasis since 1979. The market demand for coal, as with any commodity, will always be satisfied in a competitive market. As long as the pricing mechanism is allowed to function, federal and nonfederal mines will produce enough coal to meet market demands. Current analysis reveals that a policy of no future federal coal leasing would not cause a nationwide coal shortage. The price of coal, however, would probably increase. Without future federal coal leasing, coal will continue to be developed to meet consumer demand, but in many cases on coal tracts that are less economically efficient to mine, which could result in higher consumer costs.

Without the ability to consider new federal coal leasing, the Federal Government cannot provide the opportunity to satisfy the market demand for acquiring and developing new leases. Forecasts of future energy demands and supplies are subject to many uncertainties, which increase as the forecasts are extended farther into the future. As events since 1979 have shown, it is difficult to predict accurately how energy users and suppliers would respond to changing energy supplies, new energy and environmental legislation, and changing energy prices. It is similarly difficult to predict to what extent users will either adopt conservation measures and alternative energy sources, or consumers will be willing to change their behavior. Information about current and expected future energy reserves is often highly speculative. Changes in technology may greatly alter the relative economics of different energy sources. Changes in government regulations can also cause important shifts in the relative desirability of one energy source compared to another.

Even with their uncertainties and weaknesses, production forecasts and capacity estimates are useful for planning purposes. At the medium production level, 374 million tons per year of coal are projected to be needed from the West by 1995, an increase of 47 percent over 1984 coal production of 254 million tons for the West.

The discussion in the 1979 FES (BLM 1979a) heavily emphasized supply and demand forecasts almost to the exclusion of what was even then recognized as the real cost of no future federal coal leasing. As stated in the 1979 FES, the main effect of leasing less federal coal than is needed to meet national energy objectives is likely to be altered patterns of coal development at both national and regional levels. But total national coal production would not be significantly reduced.

The current situation for western U.S. coal is constrained production due to a lack of markets. Western coal production would therefore be relatively unaffected in the short run by the amount of coal the government chooses to lease. In other words, although a policy of no new federal coal leasing might tighten supplies and increase costs by disrupting the reserve needs of existing operations for production maintenance or expansion, such a policy would not significantly lower overall coal production. Similarly, a policy of overleasing would not lead to increased coal production. But overleasing could lead to an increased uncertainty as to where coal will be mined in the future, which is a particular concern of state and local governments and residents.

LEGAL AND ADMINISTRATIVE FACTORS

Procedures to consider the need for future competitive leasing make up only one part of a federal coal management program. The Department of the Interior has no existing statutory alternative to processing existing PRLAs and, for those applicants able to show discovery of commercial quantities of coal under appropriate environmental controls, must either issue a noncompetitive lease or offer an exchange, or seek other suitable compensation. A continuation of a federal coal management program, at least to the extent of issuing noncompetitive leases for PRLAs, appears necessary without legislative relief. A formal program would be needed to at least process the PRLAs; to conduct land use planning required by law before leases can be issued; to assess environmental impacts of preference right leasing; and to consider whether exchange, displacement through new competitive leasing, or other approaches are appropriate for dealing with environmentally unsatisfactory PRLAs.

COMPETITION

One of the objectives of federal coal management is to ensure the availability of coal reserves to further healthy competition in coal markets, especially for utility contracts. This goal has been an ongoing concern of the Antitrust Division of the Department of Justice, which advises the Department of the Interior according to Section 27 of the MLA. This section requires the Department to consult with the Department of Justice in formulating and conducting the federal coal leasing program and issuing federal coal leases.

Over the long term, a decision not to offer federal coal could inhibit competition in the western coal industry. Coal purchasers would have to obtain coal from companies or individuals holding existing federal leases or nonfederal reserves. The 15 largest coal companies account for over 40 percent of the Nation's coal production. Of the Nation's estimated 6,300

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active coal mines, the 50 largest mines account for 30 percent of total production. Past federal coal leasing has also been somewhat concentrated in that 38 percent of the acreage under lease and 63 percent of leased federal reserves are controlled by 11 integrated energy companies.

Running counter to this trend is the fact that 18 of the 32 new production federal coal tracts leased competitively since 1981 were acquired by companies with no previous federal coal lease holdings. Only one new production lease offered since 1981 was acquired by a company listed among the 15 largest federal coal lessees.

The dominant use of western coal is for generating electric power. The Department of the Interior believes that it is in the national interest to ensure an adequate coal supply so that more than one potential supplier can bid on new utility contracts. By providing a mechanism for future federal coal leasing, the Federal Government will be able to provide the opportunity for new firms to enter a region as potential coal suppliers when appropriate. This opportunity is not open-ended. Limits are placed on this opportunity by diligent development and continued operation requirements and market constraints. These constraints serve to control speculation in federal coal leasing.

Though the benefits derived from more competition within the regional coal industry cannot be easily measured, competition among suppliers in a market situation will generally tend to reduce the cost of that product or service and the price paid by consumers.

OTHER FACTORS IN THE NATIONAL INTEREST

Continuing a federal coal management program by selecting from among the alternatives studied in this EIS (other than No New Federal Leasing) would provide varying degrees of flexibility to deal with changing market and political circumstances. It would not necessarily result immediately in new competitive leasing but would provide a mechanism to regularly consider the need to lease. If coal is needed for future development, the program could respond to that need. If coal leasing is not needed, the program would provide a mechanism for a decision not to lease. If national energy needs should sharply escalate in the future due to international political events, this management flexibility could provide essential national security benefits.

The ability to lease in a timely manner can also promote job stability by allowing existing mines the opportunity to purchase coal reserves when needed to continue their operations. This ability also promotes the social stability of communities.

Federal and state governments would also benefit from the bonuses and royalties that could be obtained from sales of new federal leases. From fiscal year 1981 through 1984, the Federal Government received \$221.4 million in production royalties and lease rentals and \$139.7 million in bonuses for federal coal leases sold. Because most of the acreage offered for coal lease sale each year is offered through deferred bonuses, not all of the bonus money has yet been received.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Under Section 35 of the MLA, mineral revenues are distributed as follows: 50 percent to the states in which the coal leasing occurred, 40 percent to the reclamation fund (a fund created by the Reclamation Act of June 17, 1902, to be used to build and maintain irrigation works for the reclamation of arid and semiarid lands in the western United States--see 43 U.S.C 391 for details), and 10 percent to the general revenues of the United States. Therefore, during fiscal years 1981 through 1984, the coal states received \$111 million from production royalties and rentals on federal coal leases. Another \$70 million in bonus revenues is being distributed to the states as a result of lease sales held during this period.

PROPOSED ACTION AND ALTERNATIVES--INTRODUCTION

The 1979 FES (BLM 1979a) analyzed seven major alternative coal programs. The alternatives analyzed in this supplemental EIS are (1) the Proposed Action to continue the current modified coal management program as described in this chapter and in Appendix 6, (2) Leasing by Application, (3) Preference Right and Emergency Leasing, and (4) No New Federal Leasing--the no-action alternative. These alternatives differ in the level of involvement of the public and of federal and state agencies and in the amount of federal coal that would be considered for leasing. Table 2-1 summarizes the main features of these alternatives. Alternatives which were identified in scoping but have not been fully analyzed in this EIS are presented at the conclusion of this chapter.

None of these alternatives would significantly alter the level of coal production required to meet the Nation's energy needs. Development patterns to meet that need (mining of federal versus nonfederal coal, regional shifts, and surface versus underground mining), however, could vary, depending on the program alternative selected. These development patterns are discussed in Chapters 3 and 4.

On June 1, 1979, the Secretary of the Interior established a federal coal management program, which was described in the 1979 FES (BLM 1979a) as the Preferred Program. The following major elements were presented in the 1979 FES:

- planning systems,
- need for leasing (market analysis),
- sales procedures,
- enforcement of lease terms and conditions,
- management of existing leases,
- preference right lease application (PRLA) processing,
- integration of National Environmental Policy Act (NEPA) procedures, and
- emergency sales procedures.

The individual elements of the Proposed Action, both those already part of the program and those proposed as a result of program reviews, have been incorporated into the description of the Proposed Action. The text describes the proposed program in more detail and in a more logical order than appeared in the draft supplemental EIS. The references to changes in procedures and regulations implementing the federal coal management program have been removed

PROPOSED ACTION AND ALTERNATIVES – INTRODUCTION

TABLE 2-1
COMPARISON OF ALTERNATIVES

ALTERNATIVES	PROPOSED ACTION	LEASING BY APPLICATION	PREFERENCE RIGHT AND EMERGENCY LEASING	NO NEW FEDERAL LEASING
ACTION INITIATOR	Department of the Interior and the states through the RCTs, in analyzing market forecasts, land use plans, and expressions of interest. Industry, through individual applications. Department of the Interior, through processing of PRLAs.	Industry, through individual applications. Department of the Interior, through processing of PRLAs.	Industry, through individual emergency lease applications. Department of the Interior, through processing of PRLAs	None.
MAJOR OBJECTIVES	Provide opportunity for new entrants; promote more efficient development of the federal coal resource; provide stability in the demand/supply equilibrium for national security objective; protect the environment consistent with all relevant laws and regulations.	Provide stability in supply/demand equilibrium; provide opportunity for new entrants. Reduce nationwide activity planning costs; protect the environment consistent with all relevant laws and regulations.	Complete processing of PRLAs, encourage development of existing leases, encourage maintenance of existing production and avoidance of bypass; protect environment consistent with all relevant laws and regulations.	Encourage development of leases already issued; protect the environment consistent with all relevant laws and regulations.
EXTENT OF STATE ROLE	Full participation through RCTs, FSCAB, consultations with governors.	Consultation with governors.	Consultation with governors.	Consultation with governors.
TYPES OF TRACTS	Any type: new mine, mine extension/expansion, and bypass.	Any type, determined by applicant.	Emergency lease tracts or new production for PRLAs.	None.
LAND-USE PLANNING	Future rounds would require resource management plans. Applications could be based on amendments to management framework plans, if data adequacy standards are met.	Future applications could be based on resource management plans or amendments to management framework plans.	Future applications could be based on resource management plans or amendments to management framework plans.	None.
PREFERENCE RIGHT LEASE APPLICATIONS (PRLAs)	Complete processing within 2 years of resumption (except those with wilderness conflicts).	Complete processing within 2 years of resumption (except those with wilderness conflicts).	Complete processing within 2 years of resumption (except those with wilderness conflicts).	Indefinite deferral of processing, exchange for noncoal lease or monetary credits, or request for legislative relief.

RCT = Regional Coal Team FSCAB = Federal-State Coal Advisory Board
PRLA = Preference Right Lease Application

AVF = alluvial valley floor

from this chapter because they were viewed as confusing to the description. These references, however, still appear in Chapter 1 (Tables 1-6, 1-7, and 1-8).

Procedures that have been proposed as a result of the program review following the reports of the Commission on Fair Market Value Policy (Linowes and others 1984) and the Office of Technology Assessment (OTA 1984) are included in the Proposed Action. Several of these proposals were printed in Appendix 6 of the draft supplemental EIS. Comments on these proposals have been analyzed, and any resulting changes are included in this final EIS (Appendixes 1, 6, and 7).

Certain elements of the Proposed Action would also be part of the other alternatives providing for federal coal leasing because of statutory or policy requirements. For example, the FCLAA requires that no federal coal be offered in a lease sale unless the lands containing the coal deposits have been included in a comprehensive land use plan, and that all tracts sold receive at least fair market value. All other alternatives therefore assume that land use planning is required before any leasing can occur. The program to supervise existing leases is also common to all alternatives, as is a coal management responsibility independent of the amount or form of new leasing undertaken by the Department. Thus, the descriptions of the alternatives to the Proposed Action are briefer than the description of the Proposed Action because those elements common to all alternatives are described only for the Proposed Action. The essential elements of the current program are summarized below, under headings similar to those in the 1979 FEIS (BLM 1979a).

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PLANNING SYSTEMS

Land Use Planning

The Federal Coal Leasing Amendments Act of 1976 requires the completion of comprehensive land use planning before federal coal can be offered for lease sale. Such plans are prepared by the BLM under Section 202 of the Federal Land Policy and Management Act of 1976 for BLM-administered land and by the U.S. Forest Service under the Forest and Rangeland Renewable Resources Planning Act of 1974 and the National Forests Management Act of 1976 (Table 1-9) for National Forest System lands.

During land use planning the surface management agency would determine which areas are acceptable for further consideration for coal leasing. Under the proposed action, this determination would be made using the screening procedures described in the Federal coal regulations at 43 CFR 3420.1-4(e). Specific factors that would be required to be considered as part of this screening process are described below:

FIGURE 2-1

ENDNOTES

1. Modified step. The call for coal resource information, required in 43 CFR 3420.1-2 is expanded to include a call for all resource information (Office of Technology Assessment (OTA)* Option 3).
 2. Modified step. The screens are applied sequentially unless earlier application of later screens eliminates lands with no additional expenditure of money or personnel resources (OTA Option 5).
 3. Modified step. The decisionmaker considers thresholds at this point in a manner presently under study in BLM (OTA Option 7).
 4. Modified step. By Federal Register notice, the public is also invited to comment on the application of the unsuitability criteria. The regulations in 43 CFR Subpart 3461 are revised to reflect this opportunity for public comment (OTA Option 3).
 5. New step. As an early assessment of the need for coal leasing, a long-range market analysis is prepared for the regional coal team (RCT) for use in deciding whether to initiate activity planning (OTA Option 3 and FHV III-1). A land use plan summary provides information about the land use planning base and guides further data collection (OTA Option 3).
 6. New step. The regulations are changed to require activity planning to begin with an RCT meeting to review the need for further coal leasing in the region. The public has access to the market analysis and land use plan summary at least 45 days before the meeting (OTA Option 3).
- The RCT chairman is the BLM state director in the region most directly affected by coal leasing. The RCTs will appoint on an experimental basis three science advisors (one in renewable resources, one in nonrenewable resources, and the third in reclamation) to advise the RCTs on data adequacy (OTA Option 6).
7. Modified step. Procedures are developed to screen the expressions received for seriousness of intent (OTA Options 2 and 6) and development potential.
 8. Modified step. Procedures for delineating alternative tract configurations are developed (FHV** IV-1). Formal definitions of tract types and competitive status are developed for use in tract delineation (FHV V-1).

9. Modified step. Procedures are modified to include formal consideration in the leasing level technical paper of the level of expected leasing from coal PRLAs and the screened expressions, i.e., indications of demand (OTA Option 9).
10. Clarified step. The Department has stated that the RCT recommendations are rebuttable presumptions, which the Secretary of the Interior will accept unless there are overriding national considerations or State Governors' recommendations are accepted instead (OTA Option 2).
11. Modified step. The regulations are revised to study a proposed action and alternatives rather than a preferred alternative and alternatives (FHV IIX-1). As part of the cumulative analysis, each regional EIS will consider impact thresholds (OTA Option 6).
12. Modified step. As part of this step, the RCT will consider the current market and tract marketability analysis and the use of phased sales in the region, on the basis of phased sale guidelines (FHV III-1).
13. New step. The comments on FHV and MER are used, along with the current market and tract marketability analysis, to affirm or modify the previous sale decision (FHV III-1; OTA Option 3).
14. Modified step. Several new or modified bidding systems are used as appropriate--cooperative leasing (FHV IV-3); and experimental auction techniques, including intertract bidding (FHV IV-5 and V-3). Minimum bids are set on a regional basis and expressed as either dollars-per-acre or cents-per-ton (FHV V-5).
- 15,16. Modified steps. Guidelines for composition of the sale panel are being developed (FHV VIII-4). The 25 percent rule is being reviewed for effectiveness (FHV V-7).

* OTA refers to recommendations in the U.S. Congress, Office of Technology Assessment report--Environmental Protection in the Federal Coal Leasing Program (OTA 1984).

Program (OIA 1984).

FF FHV refers to recommendations in the Report of the Commission on Fair Market Value Policy for Federal Coal Leasing (Linowes and others 1984)

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- Development Potential. The surface management agency would assess the development potential of the coal in the planning area on the basis of the quality and amount of the coal resource and the probable costs of extracting the coal and reclaiming the lands involved. The assessment of coal development potential would involve estimating the amount and quality of economically recoverable coal per acre. Not all of the "best" coal resources would have development potential, at least not within the planning period. Lands that are found to lack development potential would be dropped from further consideration for leasing.
- Unsuitability. The surface management agency would assess the degree to which all or certain stipulated methods of mining may be incompatible with resources and land uses that are covered by the unsuitability criteria. These criteria would be used to screen out lands that are assessed as unsuitable for all or certain methods of coal mining. Subject to certain exceptions in the regulations, the application of these criteria would be mandatory and reflect several of the most important resource and land use implications of coal leasing. The unsuitability criteria exceptions and exemptions are listed in Appendix 1, A Review of the Unsuitability Criteria in Federal Coal Leasing (BLM 1985c).

These criteria fall into four categories.

(1) those required under Sections 510 or 522 of SMCRA (federal lands system, buffer zones along rights-of-way and next to communities and buildings, and alluvial valley floors);

(2) those that are discretionary under Section 522 (scenic areas, land with scientific values, municipal watersheds, and floodplains);

(3) those that embody requirements under other laws that the Department of the Interior proposes to enforce by applying unsuitability criteria (federally listed endangered species and bald and golden eagle-related criteria); and

(4) those that are not required by law but that the Department of the Interior proposes to apply in its discretion as good public policy (e.g., state resident fish and wildlife).

Application of the unsuitability criteria would be an integral part of land use planning in areas with coal resources. The only exception to this requirement is the identification of alluvial valley floors (criterion 19), which may be deferred until review of a mining plan on the lands involved. The decision to allow deferral of the application of criterion 19 resulted from the cost of obtaining the detailed hydrologic data needed to make an alluvial valley floor determination during land use planning or before a lease sale. Under the Proposed Action,

(1) no criteria would be added to or deleted from the original 20 criteria in the coal management regulations set forth in 43 CFR 3461 in July 1979,

(2) resources and land uses not addressed by the unsuitability criteria would be examined as part of the multiple use assessment required by the program regulations, and

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(3) public comment would be invited on the results of applying the criteria in the land use plan (43 CFR 3461.3-1(a)),

Each criterion would be applied to unleased lands determined to have coal development potential, after which exceptions and exemptions would be applied. If the criteria apply and exceptions or exemptions do not apply, the land would be considered unsuitable for further consideration for leasing during this planning cycle. The criteria, exceptions, and exemptions would be applied in a logical progression, but the manager would have discretionary authority whether to apply the exceptions.

Lands would be assessed as unsuitable only where enough data exists to allow this assessment to be made with reasonable certainty. If the data is insufficient to complete an assessment for any of the criteria, the manager would be required to document this insufficiency in the plan and include a statement of when the data collection and the assessment would be completed.

- Multiple Use. The surface management agency would assess the degree to which all or certain stipulated methods of mining may be incompatible with other significant resources and land uses in the planning area. In making this assessment, the surface management agency would pay particular attention to the following: ambient air quality; wetlands, riparian areas, and sole source aquifers; lands near the planning area that are included in the National Park System, the National Wildlife Refuge System, the National Trail System, and the National Wild and Scenic River System; agricultural lands, cultural sites eligible for listing in the National Register of Historic Places; proposed threatened and endangered plant and animal species; and Indian sacred sites.

The procedures used in conducting this multiple use assessment would conform to the requirements of BLM manual guidance. The basis for decisionmaking would be included in the list of planning criteria prepared by the manager during the planning process and could be reviewed by the public during public participation in the planning process.

The expected results of the multiple use assessment would take one of three forms: (1) areas identified that, from a multiple use point of view, are acceptable for further consideration for leasing; (2) areas acceptable for further consideration for leasing only under certain terms and conditions; and (3) areas unacceptable for further consideration for leasing. Specific threshold levels might be established to protect other resources or land uses in the planning area.

- Surface Owner Consultation. For split estate lands (privately-owned surface ownership, federal coal ownership), surface owners who may be qualified under Section 714 of SMCRA would be asked to state their preference for or against surface coal mining on their land. Areas where a significant number of such owners oppose surface mining of federal coal would be eliminated from consideration for this mining method, unless no other lands are available.

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Under the Proposed Action, a stated preference for or against surface mining would not be binding on the surface owner. Even if qualified surface owners state a preference for surface coal mining during land use planning, they could still withhold consent before the lands are offered for lease. A preference against surface mining by an individual surface owner would also not be binding; that surface owner could later grant consent to surface mining on the land. If a group of qualified surface owners in an area states a preference against surface mining and then decides to support surface coal mining on their lands, the land use plan would have to be amended before the lands could be further considered for coal leasing.

If insufficient or inadequate data exists to complete these required assessments, the surface management agency would drop the lands in question or begin a data search. In the case of the unsuitability assessment, the surface management agency may defer application of specific criteria and exceptions until activity planning. Application of criterion 19 dealing with alluvial valley floors may be deferred until mine plan review.

Under the Proposed Action, consideration of these four factors would be integrated into the surface management agency's established land use planning and the associated environmental analysis procedures. For the BLM, these procedures are described in 43 CFR 1600, and for the Forest Service in 36 CFR 219. Though these procedures vary to some extent from agency to agency, the general steps that would be involved are shown in Figure 2-1 and briefly discussed below.

Concurrent with the Notice of Intent to begin planning, the surface management agency would issue a Call for Coal and Other Resource Information (see Appendix 6). The purpose of this Call would be to solicit data to help identify areas with coal development potential and help assess the degree to which all or certain types of coal development may conflict with noncoal resources and land uses.

Using information received in response to the Call, existing data bases, and the results of consultations with affected federal and state agencies, the surface management agency would identify areas with coal development potential. Areas not so identified would be dropped from further consideration for coal leasing during this planning cycle.

In areas identified as having coal development potential, the surface management agency would determine if other resources or land uses present might be adversely affected by all or certain types of coal mining. Such values and uses include those covered by the 20 unsuitability criteria and other significant values and uses that may occur in the resource area.

The surface management agency would then assess the degree to which these other resources and land uses would be adversely affected by all or certain types of coal mining. If the unsuitability criteria apply or other adverse effects are identified, the surface management agency, in consultation with other federal and state agencies, would determine if potential mitigation measures could be adopted, including applying exceptions to the unsuitability criteria and identifying threshold levels. If the adverse impacts cannot be mitigated and the noncoal value is covered by or unsuitability criterion or otherwise protected by law or regulation, the surface management agency would assess the area as unacceptable for all or certain types of coal development.

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For the remaining areas, the surface management agency would formulate a range of potential management alternatives. These alternatives would reflect different multiple use trade-offs and preferences concerning the desirability of adopting a mitigation measure or applying an exception.

The surface management agency would then consult with qualified surface owners in the remaining areas. If a significant number of qualified surface owners in an area express a preference against surface mining, the area involved would be excluded from further consideration for coal leasing.

The surface management agency would analyze the impacts of each alternative on the production potential of the region, on other resources and land uses, and on the human environment. The agency would then select a preferred alternative and publish the draft plan and its associated draft EIS, including a description of how the screening factors discussed above were applied in identifying areas as either acceptable or unacceptable for further consideration for coal leasing.

In response to comments received from the public, other federal agencies, and affected state and local units of government, the surface management agency would refine the analysis, select the proposed plan, and publish the proposed plan and final EIS. As modified in response to any comments or protests received, the plan would then be approved.

The approved plan would list lands that are acceptable for further consideration for coal leasing, those that are unacceptable, and those that are acceptable pending further study. The plan would document how and where the unsuitability criteria were applied and how the other required assessments were conducted. The approved plan would also include any constraints or special conditions that must be met during later, more detailed activity planning. Such conditions may include the adoption of threshold levels that may limit the timing, location, or extent of coal leasing and development. As defined in the BLM land use planning manual, threshold levels are specific, defined levels of resource use, production, or conditions established as maximum or minimum constraints in the land use plan. For example, a threshold might be the smallest amount of winter wildlife habitat essential for the survival of a herd. Thresholds are usually established for defined geographic areas but are not necessarily site specific.

Under the Proposed Action, the public could comment at the following points in the land use planning process:

- call for coal and other resource information,
- identification of issues,
- development of the proposed planning criteria,
- publication of the draft resource management plan EIS, including notice of the application of the unsuitability criteria (see Appendix 6),
- publication of the proposed resource management plan and final EIS, and
- publication of the public notice on any significant change made to the plan as a result of action on a protest.

PROPOSED ACTION

Regional Activity Planning

The major feature that distinguishes the Proposed Action from the other alternatives is regional activity planning, the process in which the need for regional coal leasing is determined and in which specific coal tracts in the federal coal production regions are delineated, ranked, and analyzed for environmental impacts and selected for possible lease sale at the Department of the Interior's initiative. The other components of the Proposed Action (leasing by application outside federal coal production regions, emergency leasing, sale procedures, and processing of preference right lease applications) are described following the description of regional activity planning.

Coal activity planning in each federal coal production region would be guided by a regional coal team (RCT)--an advisory group that would be chartered under the Federal Advisory Committee Act. Each RCT would be chaired by the BLM state director from the state in the region most directly affected by leasing (see Appendix 2). The other voting members would be the governors of each state in the region (or a designated representative), the BLM state director from the other state in the region (except in the Alabama Subregion, which has only one state), and a BLM official from the same state as the chairperson.

Nonvoting members would include a BLM Washington Office representative appointed by the BLM Director (see Appendix 6). Also participating as nonvoting members would be other state and federal officials, including representatives of state and federal agencies that have special expertise in the areas to be considered during activity planning. Federal agencies invited to participate as nonvoting members in previous rounds of activity planning include the U.S. Fish and Wildlife Service, National Park Service, Geological Survey, Bureau of Indian Affairs, Forest Service, Office of Surface Mining Reclamation and Enforcement, and the Small Business Administration. State agencies invited to participate have included the state regulatory agency in states with an approved program under the Surface Mining Control and Reclamation Act (SMCRA), fish and wildlife agencies, and the mineral resource agency.

Where coal leasing could significantly affect Indian reservations, the appropriate tribal officers would be invited to attend RCT meetings. In addition, three science advisors would be named (see Decision to Initiate Activity Planning, below, for details on their duties) on an experimental basis to serve as nonvoting members and assist the RCTs in the review of data adequacy. Where needed for assistance, the RCTs would also appoint working groups that would advise the RCTs (see Appendix 6). The Office of the Solicitor in the Department of the Interior would provide legal assistance to the RCTs.

The RCTs would provide the means for Department of the Interior-state government consultation and coordination on all other major coal program proposals in the region and would serve as the Secretary of the Interior's major forum for balancing regional and national interests. The RCTs would make recommendations to the Secretary through the BLM Director on a variety of decisions, but mainly on leasing level and final sale schedule decisions. The Secretary would accept the RCT recommendations except in a case of an

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overriding national interest or if the Secretary accepts the advice of a governor that differs from the RCT recommendation (see Appendixes 2 and 6). A written explanation of the decision would be provided to the RCT, the governors, and the public.

Each RCT would also review the regional long-range coal planning schedule and consult the appropriate surface management agencies for the status of land use planning. Each RCT would then develop a recommendation to the Federal-State Coal Advisory Board (see paragraph below) on this schedule. At its annual meeting, the Federal-State Coal Advisory Board would consider each RCT proposal and make recommendations to the Secretary through the BLM Director on the Department's long-range coal planning schedule (see Appendix 6).

The RCT voting members, the BLM Director, and the Governor of Oklahoma would make up the Federal-State Coal Advisory Board, an advisory group also chartered under the Federal Advisory Committee Act (Appendix 2). The BLM Director or designated representative would be the chairperson of this board. This board would meet at least once a year to review federal coal management issues of national interest, including the long-range coal planning schedule and long-range market analysis (see Decision to Initiate Activity Planning section below).

The RCTs and the advisory board would also serve as the forum for coordinating information on coal leasing and fee coal and coal lease exchanges as stated in the Federal-State Coal Advisory Board Charter (Appendix 2). The RCT would review fee coal and coal lease exchange proposals to evaluate their effects on competitive leasing. Although the responsible BLM state director would continue to approve or reject fee coal and coal lease exchanges, the RCTs could advise the state directors on the impacts of the exchanges on competitive coal leasing before the exchange decision is made.

The major features of regional coal activity planning are described in the following text and listed below.

Decision to Initiate Activity Planning

- Reviewing summaries of land use plans to identify unresolved issues and data needed to support tract delineation, impact assessment, and subsequent determination of fair market value.
- Reviewing long-range market analyses to determine the need to consider leasing.

Tract Delineation

- Calling for expressions of leasing interest and screening expressions.
- Delineating coal tracts (including review of data adequacy).

Leasing Levels

- Reviewing regional market analyses, land use planning decisions (including thresholds), coal and noncoal resource data adequacy, noncoal resource values, concerns of other federal agencies and state and local governments, and comments from Indian tribes and governors.

Environmental Analysis

- Preparing and reviewing site-specific impacts (individual tract profiles).
- Ranking and selecting tracts for further consideration.
- Developing alternative combinations of tracts for analysis in a regional EIS.
- Preparing and releasing the regional EIS.

Decision Process

- Reviewing environmental and current market and tract marketability analyses to develop sale schedule recommendations.
- Consulting with governors, Indian tribes, and other affected parties.
- Designating the timing of sales and types of offerings, including issues such as special leasing opportunities (public body, small business), phased sales, intertract bidding, and cooperative leasing.

Throughout regional activity planning, public participation would be encouraged in a variety of ways, including newsletters from the RCTs. A public participation calendar (see Appendix 6) that includes the steps in activity planning and lists the opportunities for public participation would also be issued. The calendar would include the following points:

- response to calls for expressions of leasing interest,
- comment on market analyses,
- comment on subfactors used by RCTs to rank tracts,
- review of tract profiles,
- comment on initial leasing level technical paper,
- comment on draft regional EISs,
- comment on tracts to be considered in the RCT's final recommendations for lease offering,
- comment during RCT meetings, and
- designation of working groups to advise RCTs.

Decision to Initiate Activity Planning. The RCTs would be responsible for determining whether to proceed with activity planning in accordance with the Department's long-range schedule for that region, to postpone the start of leasing-related activities for a specified time, to defer action indefinitely, or to cease regional activity planning in that region altogether. Before the RCT holds its first meeting to make this determination (see Appendix 6), the lead state director would prepare a summary of all land use plans (see

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Appendix 6) that would serve as the basis for the upcoming round of regional coal activity planning if the RCT determines the need for such a round. New rounds of activity planning would exclude areas under BLM jurisdiction that are not included in a resource management plan.

Also before the first RCT meeting, the lead state director would prepare a long-range market analysis (see Appendix 6). This analysis would set forth coal production forecasts and estimate coal production capacities for the region. The long-range market analysis would be used to evaluate the need to begin activity planning and to assist the RCT in developing its long-range schedule recommendation.

After consultation with other RCT members, the lead state director would invite agencies and affected Indian tribes to participate in activity planning as nonvoting RCT members. The lead state director would also consult with other RCT members and appoint three science advisors, one of whom would be expert in renewable resources, another in nonrenewable resources, and third in reclamation and mitigation techniques (see Appendix 6). These experts could be from academic institutions, interest groups, industry, or state or federal agencies other than BLM. These science advisors would review the data available for tract delineation and impact analysis and prepare reports for the RCT on the adequacy of the data.

The lead state director would further direct the appropriate BLM offices to assemble all pertinent resource data in one location to be reviewed by the science advisors. Where other surface management agencies are involved, the lead state director would make a similar request to those agencies. The science advisors would review this data and report to the RCT at its first meeting on the adequacy of the data for activity planning.

At least 45 days before the first RCT meeting, the lead state director would publish a notice in the Federal Register and other media to announce the RCT meeting date, time, location and proposed agenda, and the availability of the long-range market analysis and the summary of land use plans. Where standards for data adequacy have not already been used, the lead state director would develop draft standards and release them for public review through the same notice.

The major agenda item at the first RCT meeting would be the RCT's determination of the need for a new round of activity planning as scheduled (see Appendix 6). Key factors in the RCT's deliberations would be the long-range market analysis, the description of the land use planning decisions and adequacy of the data, and public comments on these items. If the RCT believes that activity planning should not proceed as scheduled, it would make an appropriate recommendation to the Secretary through the BLM Director.

If activity planning is to proceed, the RCT would provide direction in issuing calls for expressions of leasing interest. Following the meeting, the lead state director would prepare and release the public participation calendar.

The RCT may also propose tract ranking subfactors in this meeting or direct the lead state director to propose subfactors and solicit public comments following the meeting. The lead state director would use the Federal Register, news releases, and newsletters to solicit public comments.

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Tract Delineation. Following this first RCT meeting, the lead state director would appoint a review council to assess coal data adequacy (see Appendix 6) and tract delineation, site-specific analysis, and EIS teams. The state directors in the region would issue the call for expressions of interest, as directed by the RCT. Published in the Federal Register, this call would request specific identification of lands of interest for coal development. As a standard procedure following every RCT meeting, the lead state director would also prepare the minutes and the documentation for any RCT determination or recommendation.

The science advisors would review the coal and geologic data and prepare their report. The tract delineation team would screen expressions of interest (see Appendix 6). The results of the screening would be used to set priorities for delineating tracts and in the process for setting a regional leasing level. The RCT would review the results of the screening and the science advisors' report on the coal data and provide direction to the tract delineation team.

The tract delineation team would then delineate tracts (see Appendix 6) to meet the objectives identified by the RCT (such as provision of sufficient special leasing opportunities for public bodies or small businesses, consideration of production maintenance needs, avoidance of bypass situations, and provision of opportunities for increased competition among new entrants in the region). The team would prepare the technical portion of the tract profiles (see Environmental Analysis, below) describing the information used in delineating tracts. Once preliminary delineation was started, the science advisors would review the other resource data for adequacy and prepare their final report for the RCT.

At the same time, the review council would review coal data and identify in a preliminary report for the RCT any additional data needed to appraise the tract if the tract were to be offered for sale. This would allow time for more drilling under the federal drilling program or by industry through exploration licenses.

In the next RCT meeting, the RCT would review the tract delineation and the reports by the science advisors and review council and would develop subfactors to be used in ranking tracts. The RCT would also advise the lead state director on possible options for lands with data deficiencies. The RCT may drop such lands, request a short-term data search, or delay the activity planning schedule for a longer study. Whatever the choice, the data for the delineated tracts in question must be available for an impact analysis to be completed for the final regional EIS.

Leasing Level. During the tract delineation process the RCT would also conduct the analyses needed to establish a regional leasing level. The regional leasing level is the mechanism through which the Secretary reviews the determination that a need to lease coal exists in a region and determines the amount of coal that should be considered for leasing in the ongoing round of activity planning. The leasing level becomes the basis for the proposed action for study in the regional coal leasing EIS. The leasing level is based on the factors set out in 43 CFR 3420.2(B), including the potential economic, social and environmental effects of coal leasing on the region, expressed industry interest, expressed interest for special opportunity sales, expected production, level of expected competition, projections of future demand, national energy needs, and other pertinent factors.

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The first step in developing a leasing level would be the preparation of a leasing level technical paper that would discuss possible ranges of leasing levels for the RCT to consider. The ranges would be based on an analysis of the factor described above. Included in the technical paper would be a regional market analysis, which would address the economic factors (see Appendix 6). The social and environmental factors would be derived from land use planning decisions (including thresholds), review of coal and noncoal resource data availability and quality, and advice from state and local officials and Indian tribes.

The lead state director would send a copy of this paper to each voting member of the RCT and schedule the next RCT meeting. At least 60 days before the next RCT meeting, the lead state director would publish a Federal Register notice of the upcoming RCT meeting (including the agenda) and the availability of the leasing level technical paper and the science advisors' report on data adequacy. In this notice and in newsletters or other appropriate notifications, the lead state director would solicit public comments for 30 days on the technical paper and on the tract ranking subfactors, as directed by the RCT in the first meeting. If the region has Indian tribes that might be affected by new coal leasing, the lead state director would specifically solicit comments from these tribes.

During the 30-day comment period, the RCT voting members may also ask for a different set of assumptions than those used in the regional market analysis. Alternative runs of the National Coal Model may be included in this set of assumptions. The lead state director would then incorporate all public comments into a leasing level package and send it to the RCT voting members at least 15 days before the next meeting. In the next meeting, the RCT would review the results of screening the expressions of interest and tract delineation and the report on data adequacy by the science advisors and would develop ranking subfactors and a leasing level recommendation. The RCT would then formulate its leasing level recommendation in consideration of public comments. Additional public comments would be sought during the meeting.

After this RCT meeting, the lead state director would document the RCT leasing level recommendation, ensuring that it contains all factors considered by the RCT, the alternative ranges they considered, the supporting information, and the public comments with the RCT responses. The lead state director would transmit this package to the Secretary through the BLM Director.

The Secretary of the Interior would then consult with the Attorney General, affected state governors, surface management agencies, and affected Indian tribes. After considering the recommendations of the RCT and BLM Director and responses from the affected parties, the Secretary would establish a regional leasing level, which would be used as the basis for the proposed action in the regional EIS. The Secretary's decision and supporting documentation would be released to the public upon request.

Environmental Analysis. The site-specific analysis team would prepare a tract profile for each delineated tract. This profile would contain a summary of the information used in delineation, the site-specific environmental analysis of developing the tract (including special mitigation measures identified in land use planning), and an assessment of data adequacy. The tract profiles would also address the ranking subfactors developed by the RCT. When the tract profiles are completed, the lead state director would

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publish a Federal Register notice announcing the next RCT meeting and the availability of all tract profiles. This notice would also contain the Notice of Intent to Prepare an EIS. The EIS team would begin scoping for that EIS.

In its next meeting, the RCT would rank the tracts after reviewing all tract profiles and using the ranking subfactors developed at a previous meeting. The RCT would then select tracts for further analysis and develop alternative combinations of tracts for analysis in the EIS. At least one combination of tracts would be required to fall within the leasing level range established by the Secretary and would be identified as the proposed action (see Appendix 6) in the EIS. The RCT could develop more than one alternative that falls within the leasing level range but would identify only one of those as the proposed action. Other combinations falling outside the leasing level range would represent alternatives to the Proposed Action.

The EIS team would continue scoping and would prepare the draft EIS. The EIS would analyze all combinations of tracts developed by the RCT as well as any other reasonable alternatives proposed through the scoping process. After the lead state director files the draft EIS, the public would have a 60-day comment period, during which the EIS team would hold a hearing on the results of the ranking and selection process and on the draft EIS.

At the end of the public comment period, the RCT would review public comments on the draft EIS, review the ranking and selection of tracts (and revision of tract ranking and selection, if appropriate), and provide any needed guidance to the EIS team. At this time, tracts still lacking data for adequate impact analysis or for application of any unsuitability criteria (except Criterion 19) deferred during land use planning would be dropped from further consideration.

The EIS team would prepare the final EIS, responding to comments as appropriate and changing the analysis if any tracts are deleted or their boundaries changed by the RCT. The review council would complete its review of coal data and prepare a final report. The lead state director would also prepare a current market and tract marketability analysis for each tract included in the final EIS (see Appendix 6). This analysis would provide topical information about coal markets and the marketability of federal coal tracts being considered for possible lease sale. This information would be used by the RCT and the Secretary of the Interior in evaluating if and when lease sales should be held and which tracts, if any, would be most likely to draw an acceptable high bid.

The notice of the next RCT meeting would announce the availability of the final EIS and the current market and tract marketability analysis and would solicit public comments for RCT sale schedule recommendations.

Decision Process. In the next meeting, the RCT would review the following: (1) the findings in the final EIS, (2) the current market and tract marketability analysis, and (3) public comments on possible lease sale recommendations. Using these and other factors, the RCT would consider specific tracts to offer; the method of offering (such as cooperative leasing, intertract bidding, special leasing opportunities for public bodies or small businesses, or other special sale methods); and the timing of offering (such as a schedule for phased sales). The RCT would separately identify any tracts lacking enough data for fair market value determinations.

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The lead state director would transmit the recommendations package (the documentation of the recommendations, the current market and tract marketability analysis, public comments, RCT responses to the public comments, and other pertinent material) to the Secretary of the Interior through the BLM Director. This package forms the basis for the decision on whether to hold a lease sale, which tracts to offer, and when to offer them. In making a lease sale schedule decision, the Secretary would consult with the governors of the states in which the tracts are located, the U.S. Attorney General, and any affected Indian tribes. If the surface of any tracts proposed for lease sale is under the jurisdiction of an agency outside the Department of the Interior, the Secretary would also consult with that agency and request that the agency consent to leasing the tracts. The Secretary would consider their responses along with the recommendations of the RCT and the BLM Director. After reaching a decision, the Secretary would provide a written explanation to the RCT, the governor, and the public.

For phased lease sales held more than 120 calendar days after the initial lease sale decision, the lead state Director would review the current market and tract marketability analysis to assure that the market information and the Secretary's decision remain timely. If the results show that the sale schedule might need revising, the RCT would make a new recommendation, and the Secretary would again consult with the affected parties.

LEASING OUTSIDE COAL PRODUCTION REGIONS

Outside the five designated federal coal production regions and one subregion (see description in Chapter 1), federal coal would only be leased by application. Leasing by application would be permitted only for emergency leasing within federal coal regions but need not meet emergency criteria outside the regions. Under leasing by application, an applicant would be required to meet the same qualifications as any bidder in regional lease sales. Upon receiving an application, the Department of the Interior would notify the governor of the state in which the coal deposit is located of receipt of the application, would ensure that the application conforms with a land use plan or land use analysis, would prepare an environmental analysis on the Proposed Action and alternatives, and would hold a public hearing on the Proposed Action. The Department would also determine lease terms and conditions and, if a sale is held, fair market value after the sale.

If an application is received before a resource management plan (RMP) is completed for the area, BLM would complete the RMP or compare the application with the existing management framework plan (MFP) and prepare an MFP amendment, if needed, whichever is appropriate. Where no federal interest exists in the surface or where coal deposits are too small to justify the costs of a federal land use plan, a land use analysis would be prepared in accordance with the planning rules at 43 CFR 1600. The land use plan of another agency would be used if a review of the plan finds that it satisfies BLM requirements.

Public participation would occur through a hearing to discuss the environmental document, the proposal to offer the federal coal in a lease sale, and the fair market value and maximum economic recovery of the designated tract. The governor of the state involved would be consulted before the decision on whether to hold the lease sale is made. If federal

coal leasing on the land is administered under the Mineral Leasing Act for Acquired Lands, consent is required from the head of the federal agency with administrative jurisdiction over the lands. Sales procedures would be similar to those described below for regional coal lease sales.

EMERGENCY SALES PROCEDURES

As the 1979 FES (BLM 1979a) anticipated, certain situations arise in which the Department of the Interior must respond to a need for federal coal leases within federal coal production regions more quickly than the full activity planning process allows. The Proposed Action thus provides for the emergency leasing through leasing by application of small amounts of federal coal needed by an applicant to maintain an existing level of production, to meet contract obligations, or to prevent a bypass of federal coal. Bypass refers to the situation in which a deposit of federal coal would later be rendered economically unminable because an ongoing operation (on an adjacent federal lease or adjacent nonfederal coal) mined around it. The most federal coal that can be leased under this form of competitive leasing would be the amount needed to support 8 years of production at the applicant's average annual rate. Procedures for processing emergency lease applications are identical to those described above for leasing outside production regions.

SALE PROCEDURES

At least 60 days before a scheduled sale date, the lead state director would solicit comments on factors that may affect fair market value and maximum economic recovery for the tracts proposed for offering. For tracts involving split estate lands, BLM would issue a final call for industry or surface owners to submit written evidence of consents, required by the Surface Mining Control and Reclamation Act (SMCRA). BLM would determine the validity of consents, because split-estate tracts cannot be offered for lease without evidence of valid consent of qualified surface owners (as defined in Section 714 of SMCRA).

For any tracts the Secretary of the Interior might decide to offer in a lease sale, the state director would post a notice of sale in the BLM State Office at least 30 days before the sale and publish the notice in the Federal Register and local newspapers. A detailed statement of lease sale describing the conditions of the sale and bidding requirements for each tract would also be prepared and released to the public. The regional evaluation team (RET) would prepare a presale appraisal of each tract selected for sale. Lease sales would be conducted by sealed bid with a minimum bonus bid of \$100 per acre or its equivalent in cents per ton (see Appendix 6). At the sale, the sale official would open and announce all sealed bids (see Appendix 6) submitted for any tract offered.

A sale panel of economists, mining engineers, mineral appraisers, a BLM management official, and a BLM Washington Office representative would review the bids and request the RET to conduct a postsale appraisal of the tracts (see Appendix 6). The state would also have the opportunity to designate a representative to serve as a member of the sale panel. A smaller sale panel could be used in lease by application sales. After reviewing the postsale evaluation of bids and qualifications of bidders, the sale panel would make a

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recommendation to the state director as to whether the high bid for each tract constitutes fair market value and should be accepted or rejected. If the state director decides to accept the bid, the bidder would be requested to submit the needed information for BLM to transfer to the Department of Justice for an antitrust review.

Some tracts might be set aside for special leasing opportunities for small businesses or public bodies such as rural electric cooperatives, in accordance with the requirements of the Federal Coal Leasing Amendments Act (FCLAA). In these sales, bids would be accepted only from bidders who meet the special qualifications of the set-aside offering. No bids of less than fair market value would be accepted.

The Department of the Interior might offer only those tracts it plans to lease, or it might offer more tracts than it intends to lease through intertract bidding (see Appendix 6), in which only those tracts receiving the highest bids would be leased. Tracts might also be offered in conjunction with a sale of nonfederal coal through cooperative leasing (see Appendix 6). In areas of checkerboard ownership in the West, where alternating sections contain federal and nonfederal coal, cooperative leasing would be encouraged to promote the efficient development of both federal and nonfederal coal by providing bidders with all the terms and conditions of mining all lands in a checkerboard tract before the sale.

Appraisals of coal lease tracts would be conducted by BLM according to new guidance contained in A Guide to Federal Coal Property Appraisals (Appendix 7). The Guide provides written guidance to the regional evaluation teams (RETs) for these appraisals to ensure their quality, consistency, and reasonableness. The guide also provides for appraisal review and appropriate use.

The goal of the appraisal process is to provide a well-supported estimate of property value that reflects all factors that influence the value of the appraised property. To achieve this goal, the RET would assemble and evaluate the relevant coal and mining data and select the appraisal procedure that is most appropriate for the data.

An appraisal begins with the collection and evaluation of data from which the estimate of fair market value will be drawn. The Guide describes the general and specific data requirements, potential data sources, and the formal documentation of the data used in the appraisal process.

The Guide sets out two appraisal methods: the comparable sales approach and the income approach. The selection of an appraisal method depends upon the type of data available to the regional evaluation team. When reliable comparable sales data exist, the comparable sales approach is assumed to provide the best indication of value. But these data must meet reliability and similarity standards; otherwise, the income approach is to be used. The Guide discusses each approach in detail, presents the criteria for selecting and applying each approach, and provides examples to show the application of each approach to federal coal property valuation. Also discussed are procedures for incorporating uncertainty in the analysis and for using modeling and costing algorithms to assist the regional evaluation team in the valuation.

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The valuation would be formally documented in a written report. The report would present the data used in the valuation, the rationale for selecting the data and a specific appraisal approach, and the analysis used to obtain the estimate for fair market value. The Guide provides a format for organization of the presale and postsale appraisal reports.

The appraisal review guidance would include a review of the presale and postsale appraisals for technical accuracy and conformance to appraisal guidelines. The guidance for use of appraisals includes the criteria by which all bids are screened to determine if they qualify for further consideration and the criteria by which a recommendation of bid acceptance or rejection is made by the sale panel to the state director.

PREFERENCE RIGHT LEASE APPLICATION (PRLA) PROCESSING

Chapter 1 discusses the history and current status of PRLAs. Under the Proposed Action the Department would complete the processing of outstanding PRLAs.

For PRLAs that do not have adequate NEPA analysis completed, the Department would prepare detailed and comprehensive environmental impact statements (EISs). These EISs may cover individual PRLAs, groups of PRLAs, or entire areas or regions. Each EIS would discuss alternatives to the applicant's proposal, including the alternatives of no action, a BLM-preferred action, exchange, and withdrawal/just compensation. The EISs would also identify and discuss alternative methods of impact mitigation and will identify the preferred means of mitigating significant impacts. Alternative forms of mitigation may be general performance standards, design criteria for meeting a performance standard, or both.

After filing a final EIS, and for those PRLAs that already have adequate NEPA documents, BLM would submit a request for final showing to the applicant. This request would include a proposed lease form that contains any special lease terms and conditions identified through the NEPA process as being needed to mitigate significant impacts of mining on the PRLA areas to the human environment. The request for final showing will also require the applicant to provide estimates of costs for complying with all terms and conditions of the lease; the Mineral Lands Leasing Act of 1920, as amended; the Surface Mining Control and Reclamation Act of 1976; and all other relevant laws and regulations.

Upon receipt of the applicants' final showing data, including related cost and revenue estimates, BLM would evaluate the applicants' data to determine if the applicant has discovered commercial amounts of coal. BLM would prepare a document that clearly sets forth BLM's estimate of the cost of compliance with all the terms and conditions of the proposed lease and with applicable laws and regulations developed to mitigate the environmental impacts of coal mining.

This cost estimate document would be released for public review and comment. On the basis of public responses, BLM would revise the cost estimate document as appropriate. All substantive comments and responses thereto on the cost estimate document would be included in a decision document outlining the disposition of the PRLA. The decision document would be released to the public at least 30 days before the decision is implemented.

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NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) PROCEDURES

Environmental analysis to meet the requirements of the National Environmental Policy Act (NEPA) would be an integral part of all stages of the Proposed Action. Environmental analyses would be prepared on (1) resource management plans, (2) individual delineated tracts, (3) alternative combinations of tracts to be considered for lease offering, (4) exploration licenses issued for federal coal, (5) lease applications and other special cases (6) applications for mining permits, and (7) petitions submitted to OSM to determine an area unsuitable for mining.

Environmental documents for land use planning and leasing of coal on National Forest System lands containing federal coal would be prepared as part of national forest land use plans (see discussion in Planning, above). The Forest Service would also prepare environmental documents for any applications received for lands within any national forest. Any tracts delineated within a national forest for regional leasing would be included in the regional coal leasing EIS.

DATA ADEQUACY

The Department is proposing actions to assure that data is adequate, both in quality and quantity, to make reasonable decisions throughout the entire leasing process. Data adequacy checks would begin with land use planning, when both general and specific information is needed for the entire planning unit. As the leasing process continues, more detailed data are required to rank and compare specifically delineated tracts, to determine which, if any, tracts to offer for lease, and to estimate the fair market value of coal leases.

Guidelines and standards for data adequacy in land use planning would be incorporated into a BLM Manual Handbook, Coal Land Use Planning Procedures, but BLM state offices could set more stringent data requirements to meet local conditions. If, during the planning process, data are found to be inadequate, more data must be obtained to meet the adequacy requirements before the lands can be further considered.

The regional coal team (RCT) begins activity planning after it determines that a need exists for leasing. Two types of data are needed to make this determination. The RCT would have a long-range market analysis that addresses coal production forecasts and coal productive capacity estimates. In addition, the RCT would examine land use plan summaries to determine that adequate coal and noncoal resource data exist to proceed with activity planning.

During activity planning, more detailed and reliable data are required for delineated tracts. BLM would establish national data adequacy standards and guidelines, and the RCT for each coal region could establish more specific standards to reflect local conditions. These standards would be released to the public for comment. Each RCT would appoint three science advisors to assess data adequacy for activity planning.

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Before a coal tract can be leased, the Department would have sufficient geologic data on the coal resource on each tract to make a reasonably reliable estimate of fair market value. A review council of three or more BLM members, including at least one geologist and one mining engineer, experienced in and knowledgeable of coal geology and coal economics of the region, would be established to advise the state directors in the region. Each member would rate the adequacy of the data on four factors: stratigraphy, structure, areal extent, and coal quality.

MANAGEMENT OF EXISTING LEASES

The Department of the Interior's responsibilities to manage existing coal leases and mines must be met for all coal programmatic alternatives in this supplemental EIS.

BLM is responsible for developing policies, program guidance, and oversight for the approval and onsite management of exploration and production operations on federal and Indian lands, including exploration licenses and mining and development plans. BLM develops policy, technical standards, procedures, and guidance on the engineering and geological aspects of field operations, including standards for exploration, maximizing economic recovery, diligence in the development and production of resources, conservation of resources, protection of environmental and related resources, inspection and enforcement, and production verification.

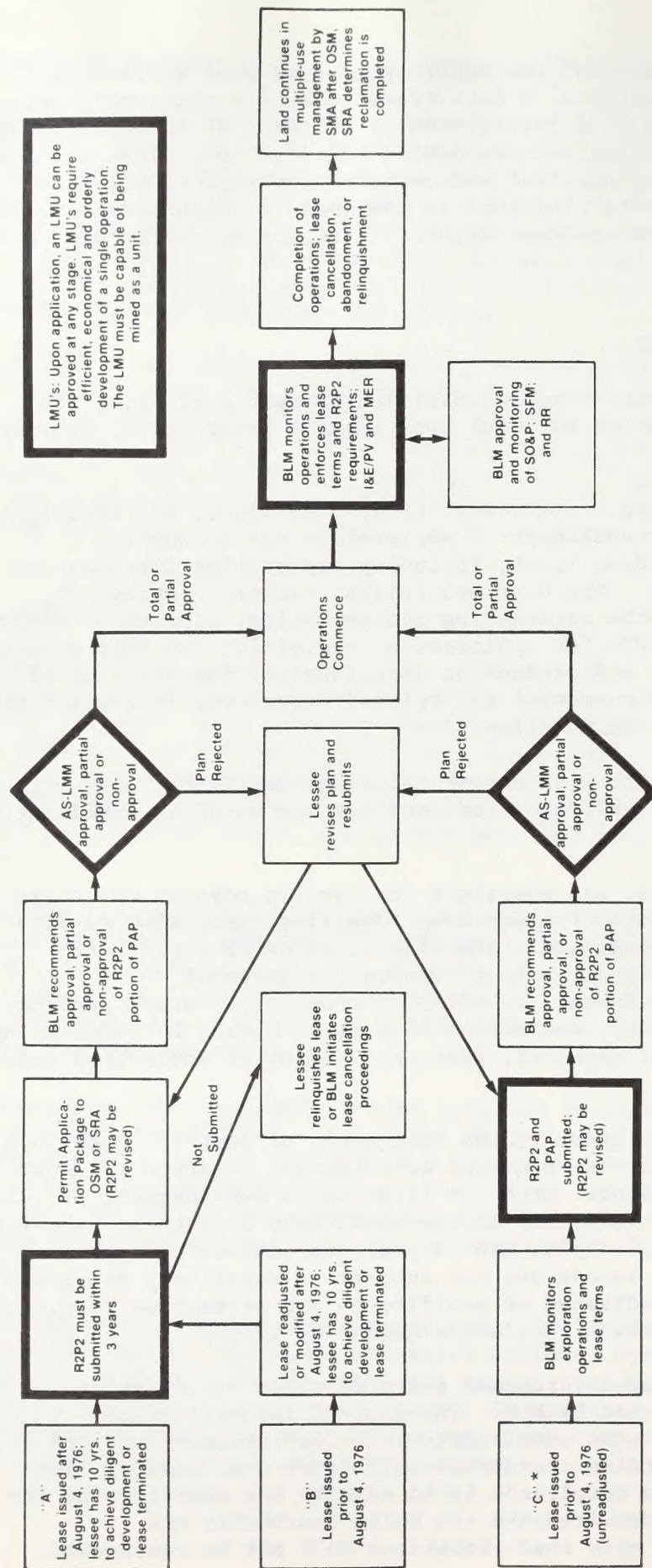
The Forest Service will consult with OSM or the State Regulatory Authority for inspecting and enforcing special conditions and environmental and reclamation requirements.

BLM provides policy, guidance, and oversight for certain royalty functions such as monitoring and approval of overriding royalties, approving royalty reductions, and verifying production. BLM also coordinates operations programs with other federal agencies (e.g. Minerals Management Service--Royalty Management, Bureau of Indian Affairs, U.S. Forest Service, Environmental Protection Agency, and Office of Surface Mining Reclamation and Enforcement), state and local agencies, industry, and other interested groups and individuals.

Figure 2-2 outlines BLM's functions in the management of leases. Note that in Case "C" leases issued before the enactment of FCLAA are governed by lease timeframes, not FCLAA timeframes. Upon the first lease readjustment or lease modification after August 4, 1976, the lessee would have 3 years to submit a resource recovery and protection plan and 10 years to achieve diligent development. Pre-FCLAA coal leases are not subject to regulatory diligence provisions until they are readjusted or modified to add acreage or recoverable coal reserves, whichever occurs first, after August 4, 1976.

Nationwide coal inspection and enforcement and production verification guidelines are being implemented by BLM. The goal of inspection and enforcement is to ensure operator compliance with lease stipulations and regulatory requirements regarding operations on federal coal leases. The preferable approach to ensure compliance is to educate the operators on the BLM requirements, show that requirements are being thoroughly and intelligently monitored, and show that violations will not be overlooked.

FEDERAL COAL MANAGEMENT PROGRAM — LEASE OPERATIONS



LMU's: Upon application, an LMU can be approved at any stage. LMU's require efficient, economical and orderly development of a single operation. The LMU must be capable of being mined as a unit.

- Attendant Operations Responsibilities:**
- Attendant Operations Responsibilities include all program activities that occur after the issuance of a permit, license, or lease including:
- Inspection and Enforcement at least quarterly on active tracts, annually on inactive tracts (for compliance with lease/license terms)
 - Production Verification/Exception Reports
 - Lease readjustments, modifications, assignments, and subleases
 - Mine Waste Control
 - Commercial Quantities and Associated Diligence Issues
 - Noncompliance; Undesirable Events; Trespass
 - Proprietary Data
 - Surface Management Actions on Leases
 - OSM Coordination
 - Appeals and Associated Legal Actions
 - Maximum Economic Recovery (MER) Determinations
 - Logical Mining Units (LMU's)
 - Surface Disturbance
 - Exploration and Mine Plan Modifications
 - Assignments/Transfers/Suspensions
 - Royalty Reductions

* For Case C, leases are governed by lease terms not FCLAA timeframes. Upon the first readjustment or modification after August 4, 1976, Case C converts to Case A at the appropriate step. Lessee would then have 3 years to submit an R2P2 and 10 years to achieve diligent development.

- Key**
- AS-LMM ... Assistant Secretary—Land and Minerals Management
 - R2P2 ... Resource Recovery and Protection Plan
 - PAP ... Permit Application Package
 - SMA ... Surface Management Agency
 - SRA ... State Regulatory Authority
 - MER ... Maximum Economic Recovery
 - LMU ... Logical Mining Unit
 - I&E/PV ... Inspection and Enforcement/Production Verification
 - SO&P ... Suspension of Operations and Production
 - SFM ... Suspension Force Majeure
 - RR ... Royalty Reduction

FIGURE 2-2

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BLM has recently published final guidelines for two issues affecting coal development--logical mining units and the leasing qualification requirements of Section 3 of FCLAA.

Since the enactment of the Surface Mining Control and Reclamation Act (SMCRA), the Office of Surface Mining Reclamation and Enforcement (OSM) has been responsible for enforcing the environmental and reclamation aspects of surface coal mining. Where leases are within the National Forest System, the Forest Service may require special conditions to be attached to the permit issued pursuant to SMCRA. Surface mining permits must reflect the environmental stipulations of the leases. Where a cooperative agreement has been signed with a state, certain SMCRA responsibilities have been delegated to the state. OSM and the appropriate agency within a cooperating state in consultation with BLM are responsible for enforcing environmental stipulations set forth in the coal lease the terms of the permit. The environmental and reclamation requirements of SMCRA are codified in 30 CFR Chapter VII.

The goal of the Department's royalty management program is to ensure the correct receipt and distribution of royalties due on the severance of federal coal. The goal of production verification is to ensure that lessees accurately report coal production for royalty determination purposes.

Logical Mining Unit Guidelines

BLM has published guidelines on the formation of logical mining units (LMUs) containing federal coal leases. A logical mining unit (LMU) is the consolidation of coal leases into a single unit and may include nonfederal as well as federal leases. When LMUs are formed, minimum federal production or diligence requirements are applied as though the consolidated unit were a single lease. For example, if an LMU is formed out of four leases, production requirements for the four individual leases may be met by production from only one producing lease. To qualify for LMU formation, operators must agree to produce all federal and nonfederal recoverable reserves in the LMU within 40 years. LMU approval also requires that the consolidation result in maximum economic recovery of the coal; that all lands be contiguous; and that the total acreage of the LMU not exceed 25,000 acres.

The LMU guidelines represent a step toward a more stable framework in which industry can evaluate present lease holdings. They set forth the requirements and conditions that must be satisfied for BLM to approve a proposed LMU. The guidelines provide background and a discussion of these provisions and set the application, consultation and public participation requirements and approval stipulations.

Section 3 Guidelines

BLM has published guidelines for implementing Section 3 of FCLAA. Section 3 prohibits the issuance of new onshore federal mineral leases to anyone holding a federal coal lease for 10 years unless that lease is producing coal in commercial quantities. It states that on or after August 4, 1986 anyone in violation of this provision will be disqualified from receiving any new federal coal, oil and gas, oil shale, phosphate, gilsonite, potash, sodium, and sulfur leases under MLA. A key provision of the guidelines is using the

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date that production on a lease begins as the starting point for "producing in commercial quantities." Leases that are producing coal in commercial amounts at a rate of 1 percent of the recoverable coal reserves and leases that are part of a producing LMU satisfy Section 3 requirements.

LEASING BY APPLICATION ALTERNATIVE

Under the Leasing By Application Alternative, the Department of the Interior would consider offering federal coal for lease sale only in response to an application for a specific amount at a specific location. All federal coal, except that covered by existing PRLAs, would be offered through competitive sales, but the regional efforts of activity planning would not be part of this program. The RCTs could be retained to review federal coal management actions and to carry out consultation with the states and other affected federal agencies before lease sale decisions. Figure 2-3 shows the major steps in this alternative.

PLANNING

Leasing by Application differs from the 1979 FES (BLM 1979a) alternative--Lease to Satisfy Industry's Indications of Need. Under the 1979 alternative, most of the coal lease planning activities would have been carried out during land use planning. For example, industry was to be specifically asked early in land use planning to nominate tracts it would be interested in leasing. These tracts were then to be delineated, carried through land use planning as possible coal lease tracts, and analyzed in the land use plan EIS.

Under the Leasing By Application Alternative, the land use planning stage would be used to weigh alternative land uses, but not to identify possible coal lease tracts. Industry and other interested groups and individuals are asked only to provide coal and other resource information during land use planning.

The two alternatives are similar only if an application is received during the preparation of a land use plan. In such a case, BLM could consider it more efficient to process the application in conjunction with the planning process, and the EIS for the land use plan could also analyze impacts of developing the area covered by the application. BLM, however, would not solicit applications or indications of leasing interest during land use planning.

Other procedures in this alternative follow those described under the discussion of the Leasing Outside Coal Production Regions component of the Proposed Action.

SALES PROCEDURES

Sales procedures under Leasing by Application would be similar to those described for the Proposed Action. Tracts might be offered through intertract bidding under either of the following conditions: (1) if several applications are received in an area and the environmental analysis shows that if all

LEASING BY APPLICATION ALTERNATIVE

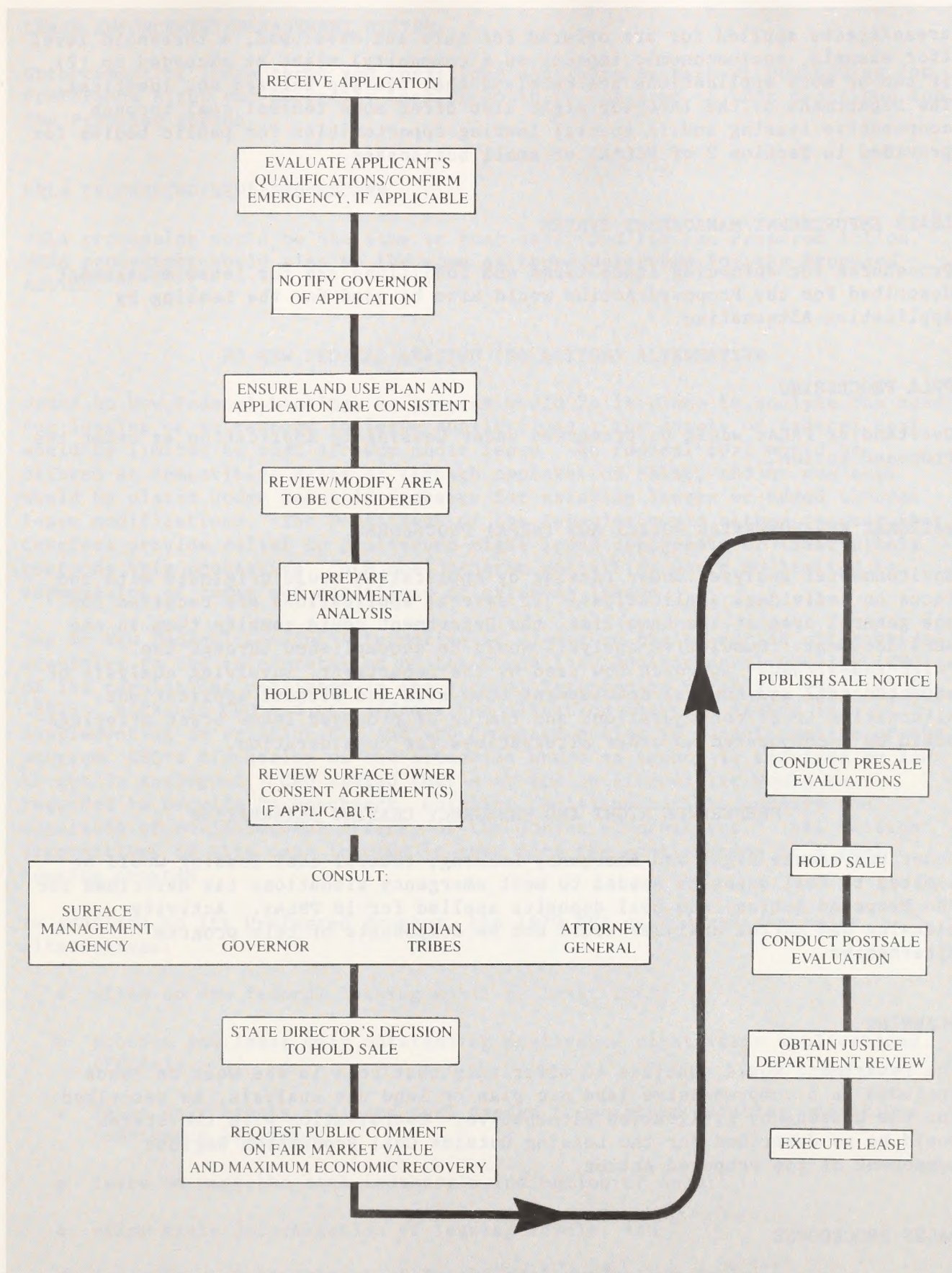


Figure 2-3 Flow Chart of Leasing by Application

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

areas/tracts applied for are offered for sale and developed, a threshold level (for example, socioeconomic impacts on a community) might be exceeded or (2) if two or more applications are received that overlap but are not identical. The Department of the Interior might also offer some federal coal through cooperative leasing and in special leasing opportunities for public bodies (as provided in Section 2 of FCLAA) or small businesses.

LEASE ENFORCEMENT/MANAGEMENT SYSTEM

Procedures for enforcing lease terms and conditions and for lease management described for the Proposed Action would also be used for the Leasing by Application Alternative.

PRLA PROCESSING

Outstanding PRLAs would be processed under Leasing by Application as under the Proposed Action.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) PROCEDURES

Environmental analyses under Leasing by Application would originate with and focus on individual applications. If several applications are received for one general area at the same time, the Department could combine them in one NEPA document. Cumulative analysis would be accomplished through the "with-and-without" approach now used by the Department, involving analysis of expected coal and noncoal development both with and without applications. Alternative tract configurations and timing of proposed lease tract offerings could be incorporated as other alternatives for consideration.

PREFERENCE RIGHT AND EMERGENCY LEASING ALTERNATIVE

Under Preference Right and Emergency Leasing, federal coal leasing would be limited to coal deposits needed to meet emergency situations (as described for the Proposed Action) and coal deposits applied for in PRLAs. Activity planning and market analyses would not be components of this program alternative.

PLANNING

The Department would continue to offer only that coal in the West on lands included in a comprehensive land use plan or land use analysis, as described for the Leasing by Application Alternative. Coordination with the states would be as described for the Leasing Outside Coal Production Regions component of the Proposed Action.

SALES PROCEDURES

Sales procedures under this alternative would be the same as the procedures described for the Leasing by Application Alternative.

NO NEW FEDERAL LEASING ALTERNATIVE

LEASE ENFORCEMENT/MANAGEMENT SYSTEM

Enforcement of lease terms and conditions and lease management procedures for Preference Right and Emergency Leasing would be the same as that described for the Proposed Action.

PRLA PROCESSING/NEPA PROCEDURES

PRLA processing would be the same as that described for the Proposed Action. NEPA procedures would also be the same as those described for the Proposed Action.

NO NEW FEDERAL LEASING (NO ACTION) ALTERNATIVE

Under No New Federal Leasing, no program would be in place to analyze the need for leasing or to respond to lease applications. The supply of federal coal would be limited to that already under lease. No federal coal would be offered at competitive sales or through approval of PRLAs, and no new coal would be placed under lease in exchange for existing leases or added through lease modifications. The Department of the Interior could either request that Congress provide relief to preference right lease applicants or indefinitely postpone this processing. BLM coal program activities would be limited to supervision of terms and conditions of existing leases.

The No New Federal Leasing Alternative is viewed as the no-action alternative according to the interpretation by the Council on Environmental Quality (CEQ) of its regulations published in the Federal Register on March 23, 1981, 46 FR 18026. Although CEQ did not address the situation where an agency is supplementing an existing EIS and the Proposed Action is a continuation of the program, CEQ's discussion of the situation where an agency is required by law to act is analogous. CEQ stated that a no-action alternative would be required to provide "a benchmark, enabling decisionmakers to compare the magnitude of environmental effects of the action alternatives." All "action" alternatives in this case involve in some form the continuation of a coal leasing program.

In addition to its Preferred Program, the 1979 FES considered six major alternatives:

- allow no new federal leasing until at least 1985;
- process and lease only outstanding preference right lease applications (PRLAs);
- lease only bypass coal and coal needed to maintain existing operations (emergency leasing);
- lease to meet the coal industry's indication of need;
- allow state determination of leasing levels; and
- lease to meet Department of Energy coal production goals.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Not all of these are now feasible or reasonable alternatives to the current Proposed Action. Some of the 1979 alternatives are incorporated into the present alternatives, but under a different title. Circumstances have changed since 1979, making certain other alternatives unworkable. The following discussion clarifies disposition of each 1979 FES alternative.

If land use planning has not been completed in an area subject to emergency and preference right lease applications (PRLAs), the criteria would be applied directly to the tract areas. The land use plan would describe the adequacy and reliability of the data used in making the unsuitability assessment.

ALTERNATIVES IDENTIFIED BUT NOT CONSIDERED FURTHER

During the scoping process, a number of alternatives to the Proposed Action were identified that, for a variety of reasons, have not been analyzed in this FEIS. In some cases, features of the suggested alternatives were incorporated into other alternatives, which were then analyzed. In other cases, the alternative was not considered feasible or reasonable to implement at this time. In still other cases, the alternative proposed was found to have essentially the same impacts as alternatives that were analyzed.

The following discusses each alternative proposed and explains why it was not included in the FEIS.

1. Alternatives analyzed in the 1979 FES for the Federal Coal Management Program.

The Preferred Program from the 1979 FES with modifications has been analyzed as the Proposed Action in this FEIS. The six other major alternatives have not been included for the following reasons:

- No New Federal Leasing Until at Least 1985: This 1979 alternative is incorporated into the Proposed Action. The 1979 FES analyzed an alternative coal management option in the context of a situation in which no federal coal leasing had occurred for 9 years. Thus, that FES considered the need for immediate new leasing and an alternative that delayed new leasing for 6 years. The Proposed Action here does not consider the need for new leasing; this consideration is left to the regional coal teams (RCTs) and the Secretary of the Interior. Thus, RCTs could defer the start of an activity planning cycle and delay leasing-related actions or the Secretary could defer sales, if market studies do not justify federal leasing.
- Process and Lease Only Outstanding Preference Right Lease Applications: This 1979 alternative has been incorporated into the Preference Right and Emergency Leasing Alternative.
- Lease Only Bypass Coal and Coal Needed to Maintain Existing Operations (Emergency Leasing): This 1979 alternative is also incorporated into the Preference Right and Emergency Leasing Alternative.

ALTERNATIVES IDENTIFIED BUT NOT CONSIDERED FURTHER

- Lease to Meet the Coal Industry's Indications of Need: The basic concept of this 1979 alternative, that the Department play a passive role in coal leasing and respond only to industry's initiatives, has been incorporated into the Leasing by Application Alternative, which includes sales in response to industry applications. The number of tracts, their locations, and the amount of coal offered at lease sales would vary depending on the applications received. The Department rejected, however, the elements of industry nominations and analysis of proposed lease tracts during land use planning (major elements of the EMARS II program on which this alternative was based) because these elements are inconsistent with the land use planning process developed since 1979.
- Allow State Determinations of Leasing Levels: Elements of this 1979 alternative have been incorporated into the Proposed Action through changes to the Federal-State Coal Advisory Board Charter in 1984 (see Appendix 2). These changes strengthened the role of the western coal states, by providing that RCT lease sale recommendations be accepted by the Department except for instances of overriding national interest. As a result, no attempt has been made to design a separate alternative in this FEIS.

2. Alternatives proposed as the result of public participation.

During scoping for this supplemental EIS and in comments on the DEIS, commenters suggested that a "Leasing for Need" alternative be studied. Such study would involve identifying need as follows:

- assessing the need for coal production based on consumer demand and
- assessing likely coal production from existing and planned mines.

Both of these items are included as features of market analysis in the Proposed Action. Furthermore, the Proposed Action calls for periodic and topical re-evaluations of the outlook for federal coal and the amount, quality, and location of coal to be offered to assure compatibility with market conditions. The major difference between the Proposed Action and the Leasing for Need alternative is that the Leasing for Need alternative proposes that the Department adopt a specified fixed, discretion-limiting policy on the setting of leasing levels. This is a question of policy related to implementing a specific program component, not a separate program design alternative. The Proposed Action includes most of the significant points in the Leasing for Need alternative proposal, and the remaining minor differences are not believed sufficient to warrant separate analysis in this supplemental EIS. The "leasing for need" alternative has been more extensively discussed in the text of Chapter 7.

One commenter on the draft supplemental EIS suggested offering all federal coal for lease as an alternative. The alternative was not considered reasonable because of problems associated with obtaining fair market value (as required by Section 3 of the Federal Coal Leasing Amendments Act). Accordingly, the alternative was not analyzed in the final EIS.

An alternative examining the impacts of delaying further federal coal leasing until adequate baseline data are collected was proposed as a reasonable alternative to the Proposed Action by a commenter on the draft supplemental

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

EIS. Aspects of this alternative have been incorporated into the leasing process of the Proposed Action, as opportunities exist for RCTs to delay any new leasing in their region or to eliminate specific tracts from further consideration if adequate data is not available. Further discussion of this alternative is included in Chapter 7, Categorical Analysis of Comments.

The same commenter proposed that the FEIS examine an alternative addressing split estate leasing in order to avoid the disruptive impacts of leasing of federal coal underlying private surface. The Department does not believe that split-estate leasing is an appropriate programmatic alternative because it is not an issue in all regions. Issues surrounding split-estate leasing would be considered by RCTs on a regional or site-specific basis as appropriate.

CHAPTER 3

Production Forecasts



ORGANIZATION AND SUMMARY

Chapter 3 summarizes the regional coal production forecasts. Appendix 8 presents the forecasting methodology and inputs in greater detail, discusses sensitivity analysis issues not reflected in the forecasts presented, and provides more information on the derivation of the regional capacity estimates.

BLM derived the coal demand forecasts used in this supplemental EIS with support from the Department of Energy (DOE). The forecasts are based on the detailed historical and near-term (to 1995) energy data and coal outlook from DOE's Energy Information Administration (EIA); the broader, long-term (2000 and beyond) energy projections of DOE's Policy and Fossil Energy offices; private industry data and forecasts, and the BLM field staff's regional and mine-specific evaluation of coal production capacities through the year 2000. A major tool used in this analysis is the DOE's National Coal Model (NCM). Chapter 3 briefly describes the NCM and its use in this effort, including a discussion of the major economic and energy assumptions behind the three production levels and how alternative assumptions were incorporated into the analysis. More detail on these subjects is presented in Appendix 8.

The coal demand forecasts show that the alternative federal coal leasing programs analyzed in this supplemental EIS could affect patterns of U.S. energy production and consumption in the future. Table 3-1 shows the range of the forecasts in the three DOE coal-producing aggregated regions of the United States and the effect on these aggregated regions of the Proposed Action versus No New Federal Leasing alternatives. More detailed tables later in this chapter show the effects on the individual federal coal production regions.

The difference in environmental impacts among the alternative leasing options basically depends upon how each alternative would affect the supply of available coal reserves in the leasing regions. Under the Proposed Action, industry and the regional coal teams are assumed to have the foresight to lease coal in time for it to be developed when needed. The assumption for Leasing by Application is similar, but the burden of foresight falls more heavily on industry. Under both of these alternatives, industry must be willing to pay fair market value to lease the coal. Also under both alternatives, given the uncertainty of future needs, some coal is likely to be leased but not developed. Moreover, not all the best coal is likely to be leased when needed, but the resultant production pattern (and its impacts) would probably lie within the range of alternatives analyzed. Therefore, a range of production forecasts for the Leasing by Application Alternatives was not felt to be needed.

The Leasing by Application Alternative is not shown in Table 3-1 because this alternative's supply assumptions and thus production forecasts are the same as those for the Proposed Action. The Preference Right and Emergency Leasing Alternative is not shown in Table 3-1 because Table 3-1 is intended to present a range of forecasts and this alternative falls within the range between the Proposed Action and No New Federal Leasing.

PRODUCTION FORECASTS

TABLE 3-1
REGIONAL PRODUCTION FORECASTS
(million tons/year)

Aggregated Regions	1985*	Low			Medium			High		
		Production Level			Production Level			Production Level		
		1990	1995	2000	1990	1995	2000	1990	1995	2000
PROPOSED ACTION										
Total U.S.	899	953	1075	1161	984	1136	1218	1041	1262	1414
Appalachian	443	452	500	552	466	548	580	511	608	670
Midwestern	193	196	220	227	196	214	223	198	233	242
Western	263	305	355	382	322	374	415	332	421	502
NO NEW FEDERAL LEASING										
Total U.S.	899	953	1078	1165	984	1139	1222	1041	1265	1416
Appalachian	443	452	500	553	466	548	581	511	608	670
Midwestern	193	196	222	230	196	216	225	198	233	242
Western	263	305	356	382	322	375	416	332	424	504

*1985 production is based on DOE/EIA's Spring 1985 estimate in the Annual Outlook for the U.S. Coal (DOE/EIA 1985a).

Note: In Table 3-1, the Appalachian regions consist of Ohio, Pennsylvania, Maryland, Virginia, West Virginia, eastern Kentucky, eastern Tennessee, the Carolinas, Georgia, and Alabama. The Western regions consist of the northern Great Plains, the Rocky Mountain states, the Southwest, the Northwest, and Alaska. The Midwestern regions consist of all states between the Appalachian and Western regions, including Texas. The Alabama Subregion is in the Appalachian regions, the Oklahoma Subregion is in the Midwestern regions, and the remaining federal regions are in the Western regions.

Table 3-1 generally reflects what happens among these major coal-producing regions of the Nation at low, medium, and high production levels. At this level of aggregation, the Proposed Action and No New Federal Leasing do not significantly differ for any of the production levels, concealing the large potential production shifts between the Western regions as shown by the more detailed Table 3-7 later in this chapter.

FORECASTING METHODOLOGY

The methodology used in forecasting involves (1) generating regional energy demands given a set of assumptions and then (2) finding the lowest cost of supplying that energy, given regional coal availability and existing/planned transportation networks. In practice, this process becomes complex. The following discussion summarizes that process and the main assumptions used. A more detailed discussion of the methodology and the sensitivity analysis used to derive the production forecasts in Chapter 3 appears in Appendix 8.

ENERGY AND ECONOMIC ASSUMPTIONS

BLM has been preparing regional coal production forecasts in close cooperation with DOE/EIA. BLM has been using the National Coal Model (NCM) modified so that its supply regions in the West correspond directly to BLM coal leasing regions. BLM generally starts with EIA's Annual Energy Outlook scenarios as base cases but usually makes changes to analyze issues of particular concern to the Western regions.

Updating the 1979 FES (BLM 1979a), however, presents forecasting problems beyond those of recent years. The analysis for this supplemental EIS needs to look beyond 1995 to the year 2000. Because this supplemental EIS is designed to guide the choice of a coal program for at least the next 5 years, the resulting impacts of leasing coal from 1985 through 1990 would not occur until after 1995 because of the 8 to 10 year lead time needed to develop a lease into a producing mine. EIA is required to publish forecasts only through 1995, but DOE's Policy Office looks beyond 2000 and is concerned about the long-term effects of the federal coal leasing program. Although the Policy Office's forecasts are conducted on a national rather than a regional basis, national forecasts can provide the main economic and energy assumptions needed for the regional analysis.

EIA and DOE's Policy Office have provided much help in extending current forecasts to 2000, especially in updating the NCM to run to 2000. Another important aspect of the overall analysis--the regional production potential under different federal leasing policies--has been provided by BLM's field staff.

ENERGY AND ECONOMIC ASSUMPTIONS

The impact analysis of this supplemental EIS uses three production levels: low, medium, and high. These levels correspond to levels of coal production in the West and to low, medium, and high total U.S. coal production. The main assumptions that affect demand forecasting are as follows.

NUCLEAR GENERATING CAPACITY

A key factor affecting the future demand for coal for generating electricity is projected growth in nuclear generating capacity. Table 3-2 shows that the highest nuclear capacity projection is used in the model for the low coal

TABLE 3-2
NUCLEAR CAPACITY ASSUMPTIONS FOR PRODUCTION FORECASTS
(in gigawatts*/year)

Coal Production		1990	1995	2000
Level				
Low		106	117	117
Medium		106	115	115
High		98	105	105

*1 gigawatt = 1 billion watts.

PRODUCTION FORECASTS

production level. The forecasts use the updated estimated year of operation start-up and net capacities in Commercial Nuclear Power (DOE/EIA 1985d). These figures reflect the latest cancellations and delays as of July 1985. No unannounced nuclear plants are assumed to be operable until after 2000.

WORLD OIL PRICES

World oil prices play a major role in the demand for coal. Low oil prices stimulate economic growth, which in turn (1) increases the demand for electricity, (2) increases the industrial demand for coal, and (3) stimulates the demand for coal exports. This effect of low oil prices far outweighs the effect of substituting coal for oil when oil prices are high. The use of coal to manufacture synthetic fuels becomes a factor only under high oil prices, but the use of coal to make synfuels is still small compared to the drop in coal use resulting from lower economic growth and electricity demand caused by high oil prices. Boiler fuel will still be switched from oil to coal unless the price of oil drops below \$20 per barrel. Such switching will probably be slower at lower oil prices than at higher oil prices, but this effect is also relatively insignificant. Thus, as is shown in Table 3-3, low oil prices correspond to high electricity (and thus coal) demand.

Table 3-3 also shows that electricity demand growth stays even with gross national product (GNP) growth at all levels of demand--the typical pattern in the economy since adjustment to higher energy prices.

TABLE 3-3
WORLD OIL PRICES AND U.S. GROWTH RATES

Production Level	World Oil Prices (1984 dollars/barrel)			Percent Annual Growth (1985-2000)	
	1990	1995	2000	Gross National Product	Electricity Demand
Low	\$40	\$55	\$60	2.5%	2.5%
Mid	30	40	45	3.0	3.0
High	25	30	35	3.5	3.5

ADDITIONAL ASSUMPTIONS

The following assumptions are also used in the analysis.

- Additional coal capacity is limited to scheduled additions for 1990. The high and medium demand scenarios required some additions beyond scheduled additions for 1995. Limits were raised for all regions in all scenarios in 2000. These limits only set a ceiling, the NCM selects any

ENERGY AND ECONOMIC ASSUMPTIONS

plants to build on the basis of projected costs. Building of gas turbine generators is unrestricted. No new oil fired steam generators are allowed.

- Current emission regulations are assumed to continue.
- Imports of Canadian electricity are assumed to be 25,000 gigawatts in 1990 and 29,000 gigawatts in 1995. In the 2000 low scenario the import level is 33,000 gigawatts. In the medium and high scenarios this level is 36,000 gigawatts. This assumption is based on the EIA publication U.S.-Canadian Electricity Trade (DOE/EIA 1982b).
- Metallurgical, industrial, residential and commercial, and synthetics coal demand were all based on DOE/EIA mid-case projections for 1990 and 1995 as presented in the Annual Outlook for U.S. Coal 1985 (DOE/EIA 1985a).
- Exports were based on DOE/EIA's low, mid and high case scenarios presented in Annual Prospects for World Coal Trade 1985 (DOE/EIA 1985c).
- The EIA projections referenced above only go as far as 1995. Projections to the year 2000 assumed trends would generally continue as projected for 1990-1995 consistent with each scenario's assumptions for the year 2000.

SUPPLY ASSUMPTIONS

In the supply analysis for the Proposed Action, potential production capacity is assumed to be restricted only by the economics of developing the demonstrated reserve base. This assumption also models what could happen under the Leasing by Application Alternative. In other words, both the Proposed Action and Leasing by Application assume that any economically developable federal coal needed to meet demand would be leased in time to do so. The form of leasing is not specified, but leasing would involve emergency leasing, preference right leasing, leasing by application, and leasing through regional sales. Coal not in the demonstrated reserve base is assumed not to have any significant effect before 2000. A similar assumption for new mining technology is supported by DOE's Policy Office and Fossil Energy Division.

The opposite case from the Proposed Action and Leasing by Application is No New Federal Leasing, which would result from a policy of not leasing any federal coal. Table 3-4 summarizes the regional production capacities from existing and projected mines under No New Federal Leasing as estimated by the BLM field staff. These capacity figures represent a baseline against which to estimate impacts of the other three program alternatives.

In Alabama, the proportion of federal coal is small, and the nature of the market is such that federal leasing would not significantly affect potential capacities. In the Western regions, the BLM field staff included all private, state, Indian, and federal coal that could be mined without more federal leasing. The estimates include only properties that could be economically mined under current conditions if the demand existed. As they expire, federal leases that the staff expects would not meet diligence requirements of Section 7 of the MLA are eliminated from consideration as potential capacity. Also

PRODUCTION FORECASTS

TABLE 3-4
COAL PRODUCTION CAPACITY--NO NEW FEDERAL LEASING
(million tons/year)

	1990	1995	2000
Fort Union Region			
North Dakota*	24-30	24-30	20-26
Montana	1	1	4-17
Powder River Region			
Montana	42	86	92
Wyoming	245	249	249
Green River-Hams Fork			
Colorado	23	28	38
Wyoming	27	33	33
Uinta-Southwestern Utah Region			
Colorado	14	12	10
Utah	20	25	27
San Juan River Region			
Colorado	3	3	4
New Mexico	30	46	51

*A range is shown for North Dakota because of a producing mine that will not be producing enough coal to meet Section 3 requirements of the Federal Coal Leasing Amendments Act.

deleted are leases expected to be relinquished for failure to meet requirements of Section 3 of the Federal Coal Leasing Amendments Act (FCLAA). The capacities account for depletion and represent long-term rather than short-term peak capacities. Actual mine plan information was used where it existed. Properties lacking mine plans were compared to similar properties having mine plans.

The Preference Right and Emergency Leasing Alternative adds potential production capacity to the No New Federal Leasing Alternative as an outgrowth of the issuance of preference right and emergency leases. Emergency lease tracts are small, having only enough reserves to support a few years' production. The main function of emergency leasing is to prevent economic hardship, mine closings, or coal bypass. Estimating potential production capacity stemming from the issuance of new preference right leases is difficult because environmental uncertainties surround many outstanding PRLAs. Moreover, many PRLAs have not yet been evaluated for commercial quantities, a test that must be passed if a lease is to be issued.

ENERGY AND ECONOMIC ASSUMPTIONS

The field staff used its best judgment in estimating which PRLAs are likely to meet the commercial quantities test. In estimating capacities, the field staff used assumptions and procedures similar to those used for No New Federal Leasing. Table 3-5 presents the field staff's estimates of total production capacity, including preference right and emergency leases.

TABLE 3-5
TOTAL COAL PRODUCTION CAPACITY,
INCLUDING PREFERENCE RIGHT AND EMERGENCY LEASES
(million tons/year)

	1990	1995	2000
Fort Union Region			
North Dakota*	26-32	30-36	31-37
Montana	1	1	4-17
Powder River Region			
Montana	48	96	102
Wyoming	245	265	265
Green River-Hams Fork			
Colorado	24	30	40
Wyoming	29	39	37
Uinta-Southwestern Utah Region			
Colorado	15	14	12
Utah	21	32	30
San Juan River Region			
Colorado	3	4	4
New Mexico	30	58	87

*A range is shown for North Dakota because of a producing mine that will not be producing enough coal to meet Section 3 requirements of the Federal Coal Leasing Amendments Act.

Another important aspect of these capacity estimates in assessing environmental impacts of the leasing program alternatives is how much of this capacity would come from new mines and how much would come from existing mines that have been upgraded or extended through construction or addition of new equipment. Table 3-6 gives the breakdown used for this determination in the

PRODUCTION FORECASTS

TABLE 3-6
CAPACITY OF EXISTING OPERATIONS
(million tons/year)

Region	Without New Construction	With New Construction or Equipment		
		1990	1995	2000
Fort Union	25-31	25-31	25-31	20-26
Powder River				
Montana	42	42	58	58
Wyoming	177	213	213	213
Green River-Hams Fork				
Colorado	16	20	23	23
Wyoming	22	27	29	29
San Juan River	25	29	29	29
Uinta-Southwestern Utah				
Colorado	6	10	10	10
Utah	17	20	23	25

impact analysis. The numbers are the capacities of existing mines (million tons of annual production) with and without new construction or equipment. The differences between these capacities and the above coal production capacities in Table 3-5 is the expected production from entirely new mines.

PRODUCTION FORECASTS

The production forecasts are the outgrowth of sensitivity analyses using the National Coal Model (NCM), powerplant schedules, mine plans, and professional judgment. The NCM is a large linear programming model that attempts to satisfy a given set of energy demands at the lowest cost from the selected coal supply curves and transportation networks. The model's main feature is its electric utilities portion because coal-fired powerplants are the major consumers of domestically produced coal. The model selects fuels, simulates powerplant construction decisions, restricts emissions, and considers interregional power transmission. Other coal demands are input for each demand region.

The interregional transportation network is derived from a modification of the algorithm used in EIA's Coal Supply and Transportation Model (CSTM). The transportation costs are derived from current rates with mileage, fuel costs, terrain, congestion, and competition as variables. The modification examined minimum annual volumes, use of railroad-owned versus shipper-owned cars, and whether the shipment is within the local area.

PRODUCTION FORECASTS

The supply curves for each coal region are produced by the Resource Allocation and Mine Costing Model (RAMC). Separate supply curves are generated for up to 30 coal types for surface and underground mining. Documentation of these models and their use may be obtained from EIA. Details of changes made for this analysis and their use in the production forecasts are presented in Appendix 8.

Sensitivity analysis was run for the draft supplemental EIS (BLM 1985c) and the Production Forecasts Technical Report (BLM 1985b), and more runs were made for the final supplemental EIS. The production forecasts presented here are from a final set of NCM runs with the given assumptions and supply restrictions. Table 3-7 and Figure 3-1 show regional coal production forecasts for No New Federal Leasing, Preference Right and Emergency Leasing, and the Proposed Action. Figure 3-2 compares production forecasts of the 1979 FES (BLM 1979a) to those of this supplemental EIS.

The forecasts for the Proposed Action assume that both government and industry have the foresight to make needed reserves available (through regional lease sales and leasing by application) in time for the reserves to be developed. This is effectively the same assumption for the Lease by Application alternative.

At the other end of the spectrum is the No New Federal Leasing Alternative. The conditions that No New Federal Leasing assumes could result under any alternative. Even processing of PRLAs or having a leasing program in place does not guarantee that the additional reserves required under any particular alternative will be leased and developed in a timely fashion. Thus the forecasts under No New Federal Leasing represent feasible possibilities.

The third set of forecasts assumes that PRLAs are processed and emergency leasing is allowed. Although emergency leasing could be analyzed separately as an alternative, its effects are insignificant. Emergency leasing was combined with preference right leasing to represent an alternative with no new production leasing other than that resulting from legally required preference right leasing.

CHANGES IN PRODUCTION AND TRANSPORTATION UNDER ALTERNATIVE LEASING SCENARIOS

The following discussion summarizes the changes between the Proposed Action and the No New Federal Leasing at the high production level as shown in Tables 3-7 and 3-8. Table 3-7 shows that the changes at the low and medium production levels are similar but less pronounced than at the high production level. Table 3-8 presents the distribution changes from the Western regions at the high production level.

The 1985 distribution estimates are based on current distribution of western coal and are extended to include growth over the next year and scheduled plant startups and contractual arrangements for this period. The 1985 estimates are the same at all production levels. Transportation shifts at the low and medium production levels would be similar to those in 1990 and 1995 at the high production level. At the year 2000 high production level, more shifting would occur than at the lower levels because the Powder River Region would reach its capacity.

PRODUCTION FORECASTS

TABLE 3-7
ESTIMATES OF ANNUAL COAL PRODUCTION
(million tons)

Fort Union Region (includes North Dakota and small parts of Montana)			
Production Level	No New Federal Leasing (Baseline)	Preference Right and Emergency Leasing	Proposed Action*
1990			
Low	19	19	19
Medium	23	23	23
High	23	23	23
1995			
Low	21	21	21
Medium	22	22	22
High	22	22	22
2000			
Low	23	23	23
Medium	24	24	24
High	25	25	25

Note: Projected production would involve only surface mining.
*Production under Leasing by Application would be the same as under the Proposed Action.

TABLE 3-7 (continued)
ESTIMATES OF ANNUAL COAL PRODUCTION
(million tons)

Powder River Region									
Production Level	No New Federal Leasing (Baseline)			Preference Right and Emergency Leasing			Proposed Action*		
	Wyoming	Montana	Total	Wyoming	Montana	Total	Wyoming	Montana	Total
1990									
Low	147	32	179	147	32	179	147	32	179
Medium	155	34	189	155	34	189	155	34	189
High	165	34	199	165	34	199	165	34	199
1995									
Low	190	32	222	186	31	217	183	31	214
Medium	200	36	236	195	35	230	192	35	227
High	233	38	271	226	38	264	218	38	256
2000									
Low	198	40	238	198	40	238	195	38	233
Medium	229	40	269	225	40	265	220	40	260
High	249	77	326	265	61	326	276	42	318

Note: Projected production would involve only surface mining.
*Production under Leasing by Application would be the same as under for the Proposed Action.

PRODUCTION FORECASTS

TABLE 3-7 (continued)
ESTIMATES OF ANNUAL COAL PRODUCTION
(million tons)

Green River-Hams Fork Region									
Production Level	No New Federal Leasing (Baseline)			Preference Right and Emergency Leasing			Proposed Action*		
	Wyoming	Colorado	Total	Wyoming	Colorado	Total	Wyoming	Colorado	Total
1990									
Low									
Surface	27	10	37	28	9	37	28	9	37
Subsurface	0	4	4	0	3	3	0	3	3
Total	27	14	41	28	12	40	28	12	40
Medium									
Surface	27	10	37	28	10	38	28	9	37
Subsurface	0	5	5	0	4	4	0	4	4
Total	27	15	42	28	14	42	28	13	41
High									
Surface	27	10	37	28	10	38	28	10	38
Subsurface	0	5	5	0	4	4	0	4	4
Total	27	15	42	28	14	42	28	14	42
1995									
Low									
Surface	22	10	32	22	10	32	22	10	32
Subsurface	0	4	4	0	4	4	0	4	4
Total	22	14	36	22	14	36	22	14	36
Medium									
Surface	22	10	32	22	10	32	22	10	32
Subsurface	0	5	5	0	5	5	0	5	5
Total	22	15	37	22	15	37	22	15	37
High									
Surface	22	11	33	28	11	39	28	10	38
Subsurface	0	7	7	0	6	6	0	4	4
Total	22	18	40	28	17	45	28	14	42
2000									
Low									
Surface	20	10	30	20	10	30	19	10	29
Subsurface	0	5	5	0	5	5	0	4	4
Total	20	15	35	20	15	35	19	14	33
Medium									
Surface	20	10	30	20	11	31	19	10	29
Subsurface	0	5	5	0	6	6	0	4	4
Total	20	15	35	20	17	37	19	14	33
High									
Surface	21	11	32	32	11	43	32	10	42
Subsurface	0	21	21	0	14	14	0	5	5
Total	21	32	53	32	25	57	32	15	47

*Production under Leasing by Application would be the same as for the Proposed Action.

PRODUCTION FORECASTS

TABLE 3-7 (continued)
ESTIMATES OF ANNUAL COAL PRODUCTION
(million tons)

Uinta-Southwestern Utah Region									
Production Level	No New Federal Leasing (Baseline)			Preference Right and Emergency Leasing			Proposed Action*		
	Colorado	Utah	Total	Colorado	Utah	Total	Colorado	Utah	Total
1990									
Low	7	20	27	6	21	27	5	22	27
Medium	8	20	28	9	21	30	5	25	30
High	9	20	29	9	21	30	5	25	30
1995									
Low	5	25	30	5	32	37	4	35	39
Medium	6	25	31	8	32	40	5	37	42
High	9	25	34	8	32	40	5	45	50
2000									
Low	7	27	34	7	30	37	4	41	45
Medium	7	27	34	8	30	38	6	43	49
High	9	27	36	8	30	38	9	51	60

Note: All mines would be subsurface underground except for some small surface mines in Colorado.

*Production under Leasing by Application would be the same as under the Proposed Action.

PRODUCTION FORECASTS

TABLE 3-7 (continued)
ESTIMATES OF ANNUAL COAL PRODUCTION
(million tons)

San Juan River Region*			
Production Level	No New Federal Leasing (Baseline)	Preference Right and Emergency Leasing	Proposed Action**
1990			
Low	22	22	22
Medium	22	22	22
High	23	22	22
1995			
Low	26	24	24
Medium	29	27	27
High	31	31	29
2000			
Low	34	34	30
Medium	34	34	30
High	37	37	34

Note: Projected production would involve only surface mining. Mining would occur mostly in New Mexico, less than one-third million tons would be mined in Colorado.

*All production levels are based on the assumption that a railroad will be built into the San Juan Basin.

**Production under Leasing by Application would be the same as under the Proposed Action.

PRODUCTION FORECASTS

TABLE 3-7 (concluded)
ESTIMATES OF ANNUAL COAL PRODUCTION
(million tons)

Alabama Subregion			
Production Level	No-Action (Baseline)	Preference Right and Emergency Leasing*	Proposed Action**
1990			
Low			
Surface	24	24	24
Subsurface	<u>14</u>	<u>14</u>	<u>14</u>
Total	38	38	38
Medium			
Surface	24	24	24
Subsurface	<u>14</u>	<u>14</u>	<u>14</u>
Total	38	38	38
High			
Surface	24	24	24
Subsurface	<u>14</u>	<u>14</u>	<u>14</u>
Total	38	38	38
1995			
Low			
Surface	28	28	28
Subsurface	<u>16</u>	<u>16</u>	<u>16</u>
Total	44	44	44
Medium			
Surface	28	28	28
Subsurface	<u>16</u>	<u>16</u>	<u>16</u>
Total	44	44	44
High			
Surface	28	28	28
Subsurface	<u>16</u>	<u>16</u>	<u>16</u>
Total	44	44	44
2000			
Low			
Surface	29	29	29
Subsurface	<u>17</u>	<u>17</u>	<u>17</u>
Total	46	46	46
Medium			
Surface	30	30	30
Subsurface	<u>17</u>	<u>17</u>	<u>17</u>
Total	47	47	47
High			
Surface	32	32	32
Subsurface	<u>20</u>	<u>20</u>	<u>20</u>
Total	52	52	52

Note: All surface mines are small (average--150,000 tons per year) as are underground mines (average--775,000 tons per year).

*In the Alabama Subregion, Preference Right and Emergency Leasing would involve issuance of emergency but not preference right leases because the subregion has no PRLAs.

**Production under Leasing by Application would be the same as under the Proposed Action.

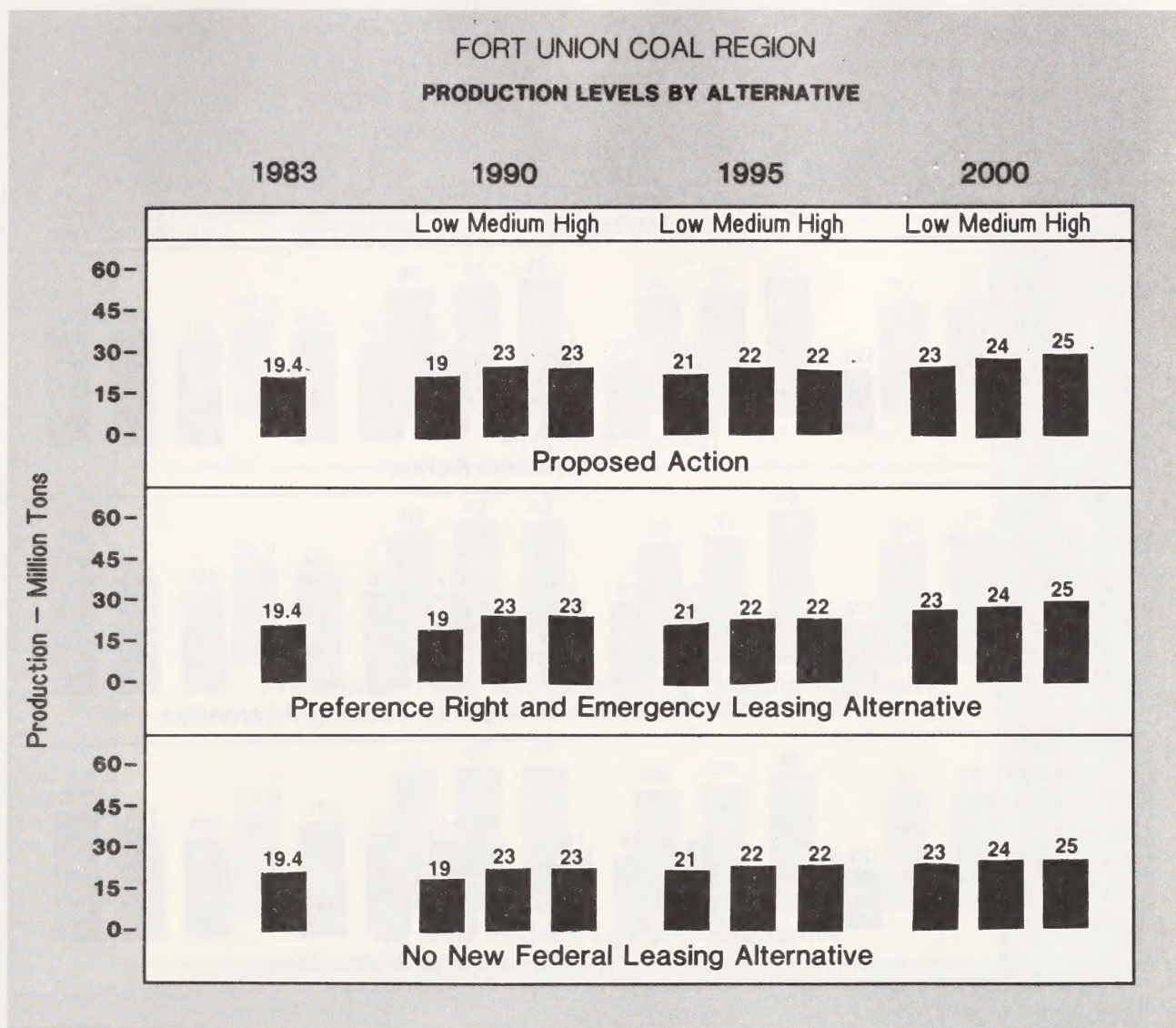


Figure 3-1a

The destinations used in Table 3-8 are defined as follows:

Local region is the coal supply region and nearby markets.

Other Rockies includes the rest of the Rocky Mountain states outside the local region (Montana, Idaho, Wyoming, Colorado, Utah, Arizona, New Mexico).

Midwest includes the states east of the Rocky Mountains and west of the Mississippi River, and some areas in states just east of the Mississippi River (especially Illinois).

West includes Washington, Oregon, California, Nevada and some coal for export from the West Coast. In some cases, coal for generating electricity in California may actually go to powerplants just over the border in Nevada or Arizona, particularly coal from the Uinta-Southwestern Utah and San Juan River regions. Nevada is included in the West, but Arizona is considered in the Other Rockies region.

PRODUCTION FORECASTS

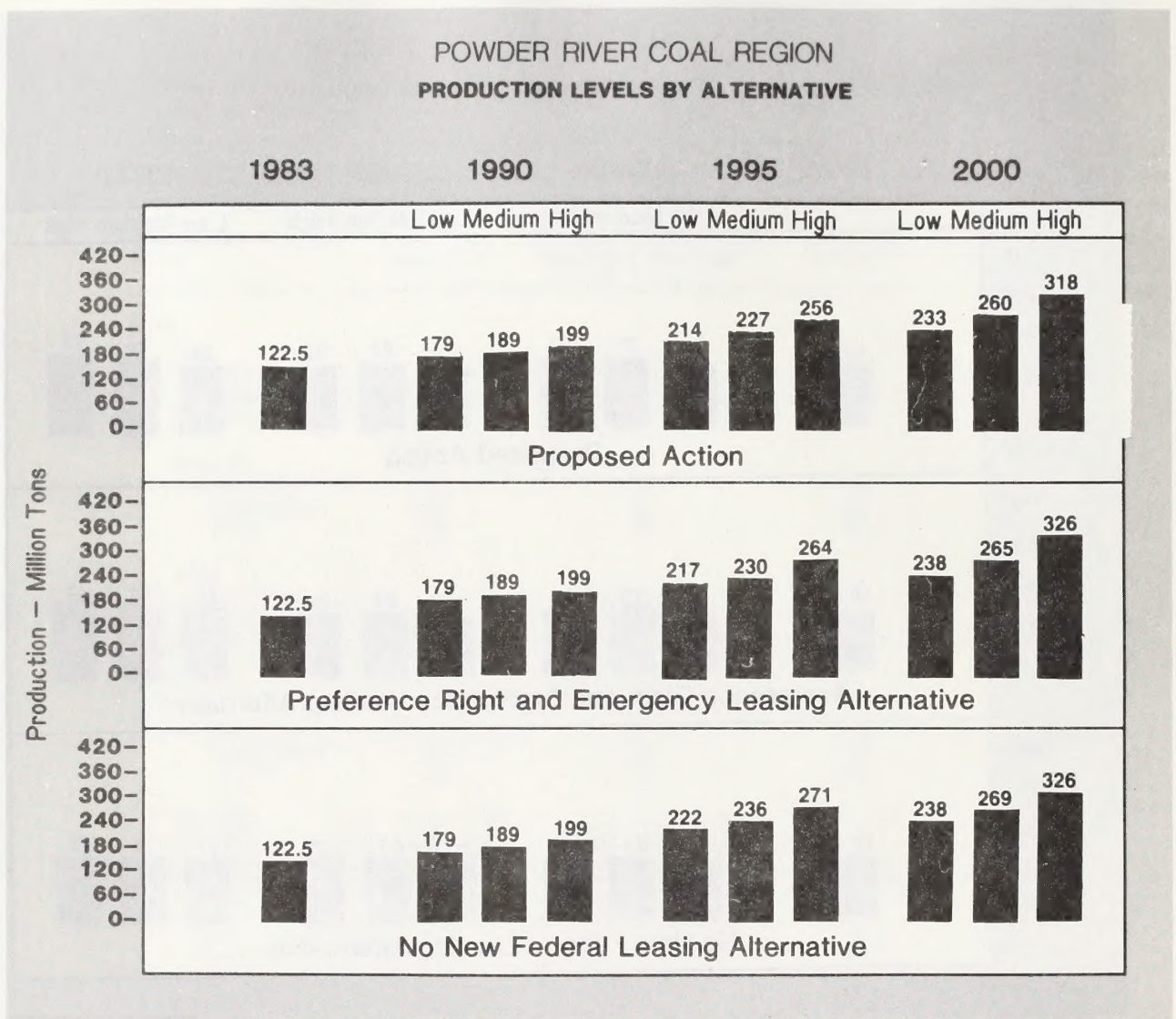


Figure 3-1b

The federal coal production regions in the West are as follows:

Powder River--southeast Montana and northeast Wyoming;

Fort Union--east Montana and west North Dakota;

Green River-Hams Fork--south Wyoming and northwest Colorado;

Uinta-Southwestern Utah--central and southwest Utah and west Colorado;

San Juan River--northwest New Mexico and southwest Colorado.

The following consumption pattern from coal for the federal regions is forecast under the Proposed Action. Fort Union coal is used to generate electricity for the Dakotas, Minnesota, Wisconsin, and Nebraska. Powder River coal is used mostly for generating electricity locally and in the Midwest. The main market for Powder River coal lies between the region and the Mississippi River, and some inroads have been made east of the Mississippi.

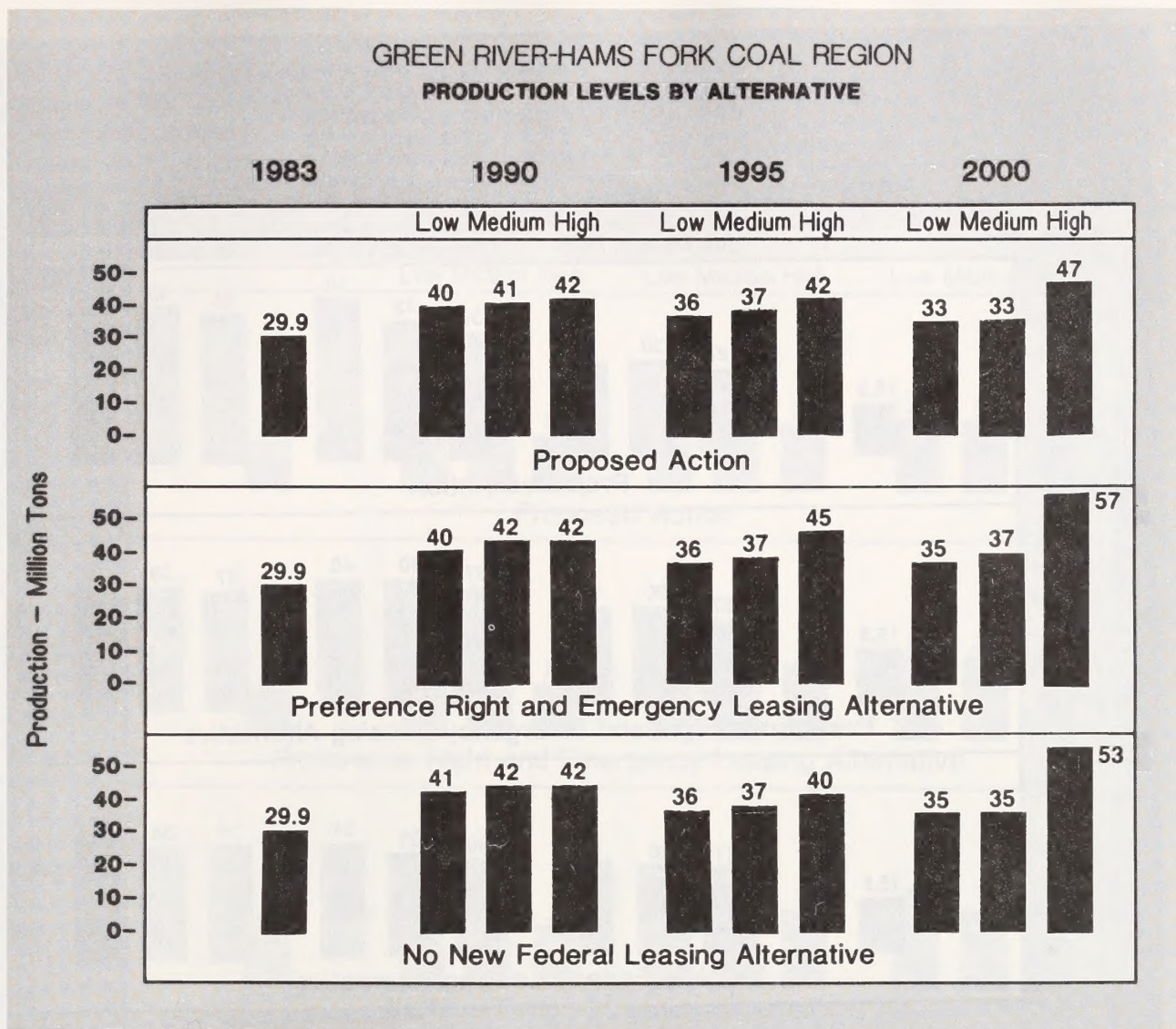


Figure 3-1c

In addition, some coal is currently shipped west of the region, mostly to a powerplant in the northwest. By 2000, especially at the high production level, much more coal would be shipped west, including to California. Coal from the Green River-Hams Fork Region would tend to spread out more over the West, Rockies, and Midwest regions. Coal from the Uinta-Southwestern Utah Region would mostly be used locally, but small amounts would be shipped to other regions, particularly to powerplants in Nevada and northern California. By 1995 this West Coast consumption of Uinta-Southwestern Utah coal would rapidly increase, mostly for powerplants and some for exports and industrial use. Coal from the San Juan River Region would mainly feed powerplants in New Mexico and Arizona, but an increasingly significant portion of that power would be transmitted into southern California.

Under No New Federal Leasing, the first transportation shifts would occur in the Rockies. Uinta-Southwestern Utah coal would be shipped less to the East and more to the West to make up for the lack of additional Utah coal. Some of the Green River-Hams Fork coal would shift to replace the displaced Uinta-Southwestern Utah coal, and in 1990 the San Juan River Region would

PRODUCTION FORECASTS

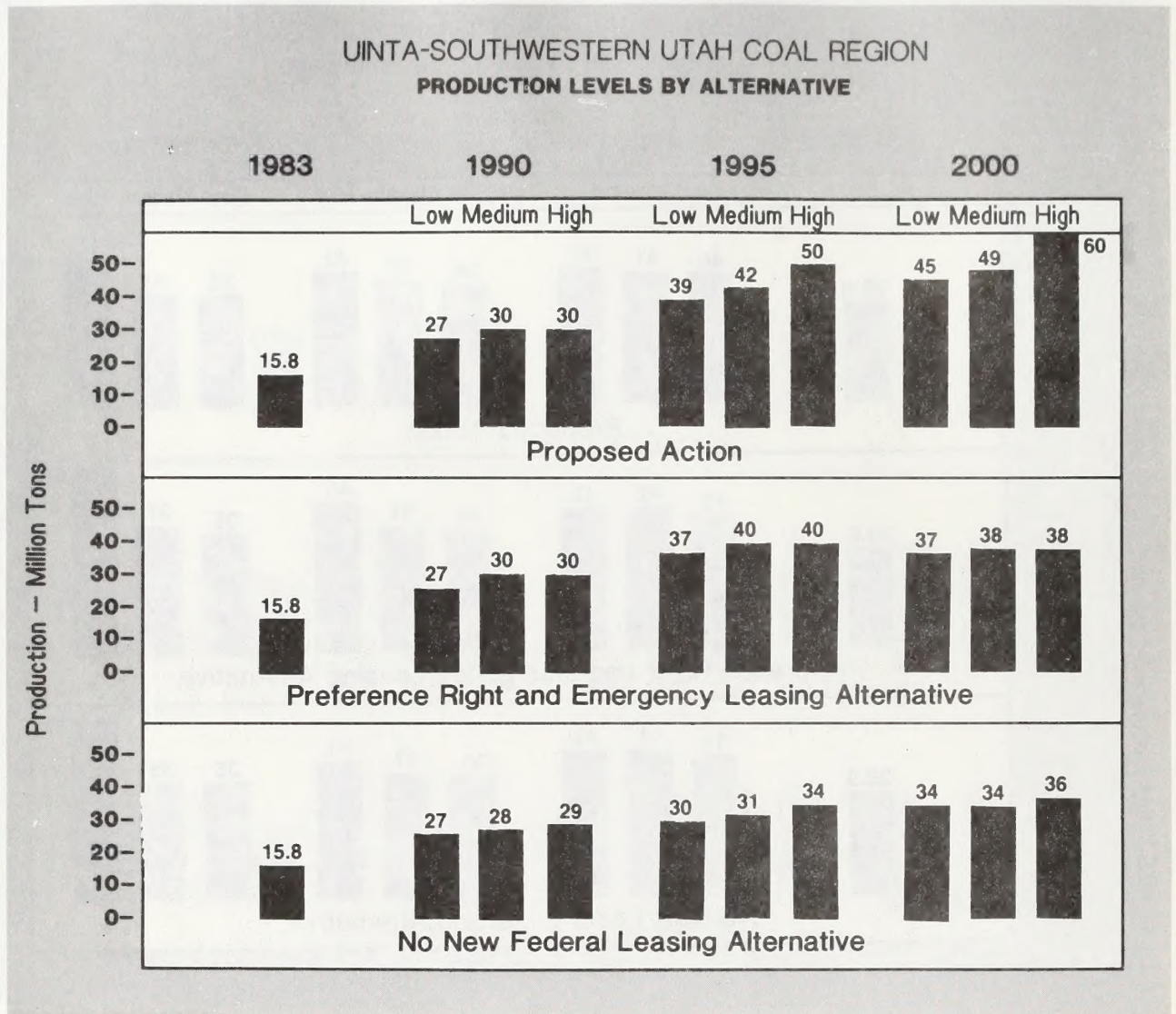


Figure 3-1d

produce 1 million more tons of coal. By 1995, the Uinta-Southwestern Utah Region could not supply the large demand to the West, which would be supplied mainly by Powder River and San Juan River coal. Most of this coal would come from increased production in the Powder River Region. The only changes in the Midwestern and Appalachian regions would be increased production of 2 million tons in Illinois and southern West Virginia.

In the year 2000, the increased production in the West would mainly involve the mining of more Powder River, Green River-Hams Fork, and San Juan River coal. San Juan River coal would be used mainly to generate electricity in Arizona for transmission to California. The Colorado part of the Green River-Hams Fork Region would become the main producer, and the Montana part of the Powder River Region would accrue most of the increase as the Wyoming part reaches its capacity. In the Midwest, Illinois production would increase by almost 5 million tons and Missouri by 1 million tons to displace the higher cost of Montana Powder River coal. In Appalachia, coal production in southern West Virginia would increase by 1 million tons, and production in several other regions would increase by fractions of this amount.

PRODUCTION FORECASTS

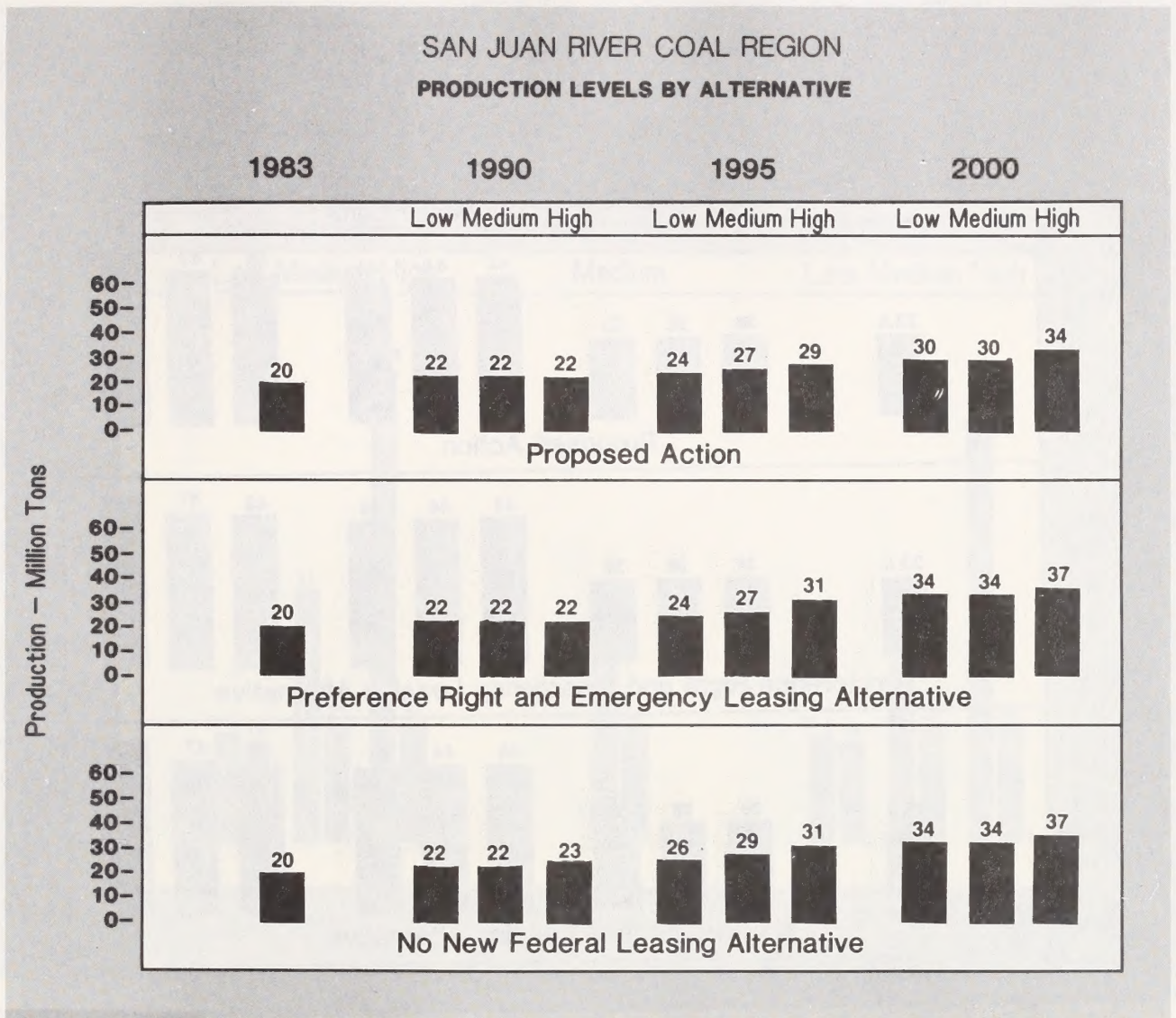


Figure 3-1e

Another way to examine the forecasts is to compare regional market shares to the current situation. Table 3-9 compares estimated 1985 market shares to the forecast market shares in 2000 under No New Federal Leasing and the Proposed Action.

Although all regions would increase coal production at all production levels, the Western regions would gain the market share, mostly at the expense of the Midwest and as a result of the higher quality of western coal and the faster growth rates in the Rockies and the South. Only slight capacity restrictions would result from No New Federal Leasing and only at the high production level.

FORECAST COMPARISONS

This section compares current forecasts to the 1979 FES (BLM 1979a) forecasts and other recent forecasts to provide a perspective from which to view the current forecasts in the supplemental EIS.

PRODUCTION FORECASTS

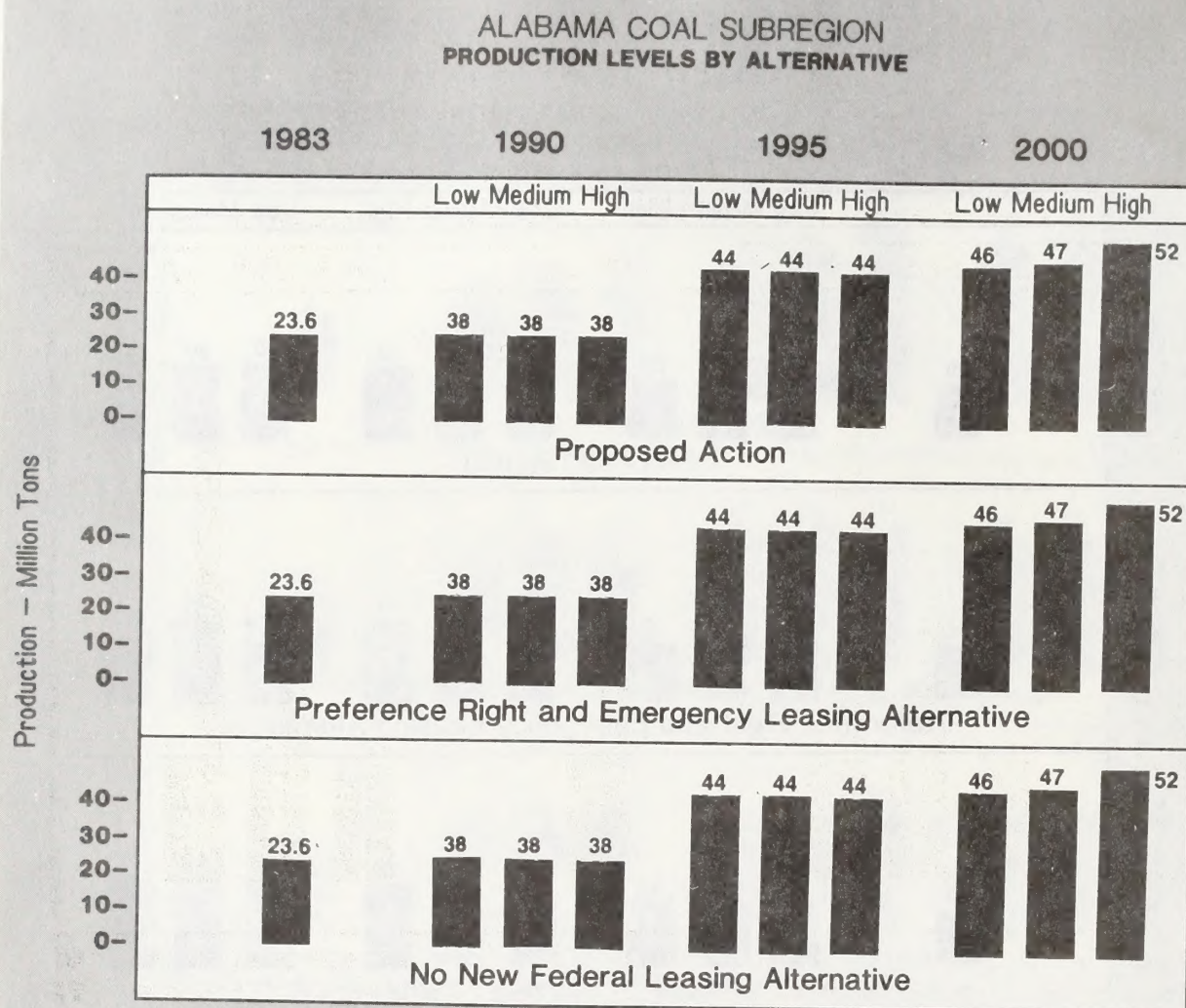


Figure 3-1f

The 1979 forecasts (Table 3-10) now appear high, but a closer examination reveals that in aggregate, the low production forecasts are not too far off. In 1985, U.S. total coal production will fall below that forecast in 1979 by less than 10 percent, according to current estimates. The forecast for 1990 (made in 1979) of 1,114 million tons is similar to the current forecast range of 953 million to 1,041 million tons. A review of the assumptions used in the low production forecast in 1979 shows why this forecast lies within 10 percent of current estimates. The regional low production forecasts are reasonable except for the Green River-Hams Fork Region, whose forecasts are much too high, and the Alabama Subregion, whose forecasts are much too low.

World oil prices used ranged from \$13 to \$20 per barrel (\$13 at the low production level). These prices seem low, but they were estimated in 1975 dollars, which, when converted to 1984 dollars, are reasonably accurate. The 1979 forecasts, however, anticipated neither the enormous increase in oil prices resulting in a worldwide recession nor the later drop in prices.

PRODUCTION FORECASTS

FORT UNION COAL REGION 1990 COAL PRODUCTION ESTIMATE 1979 FES versus 1985 Supplemental EIS

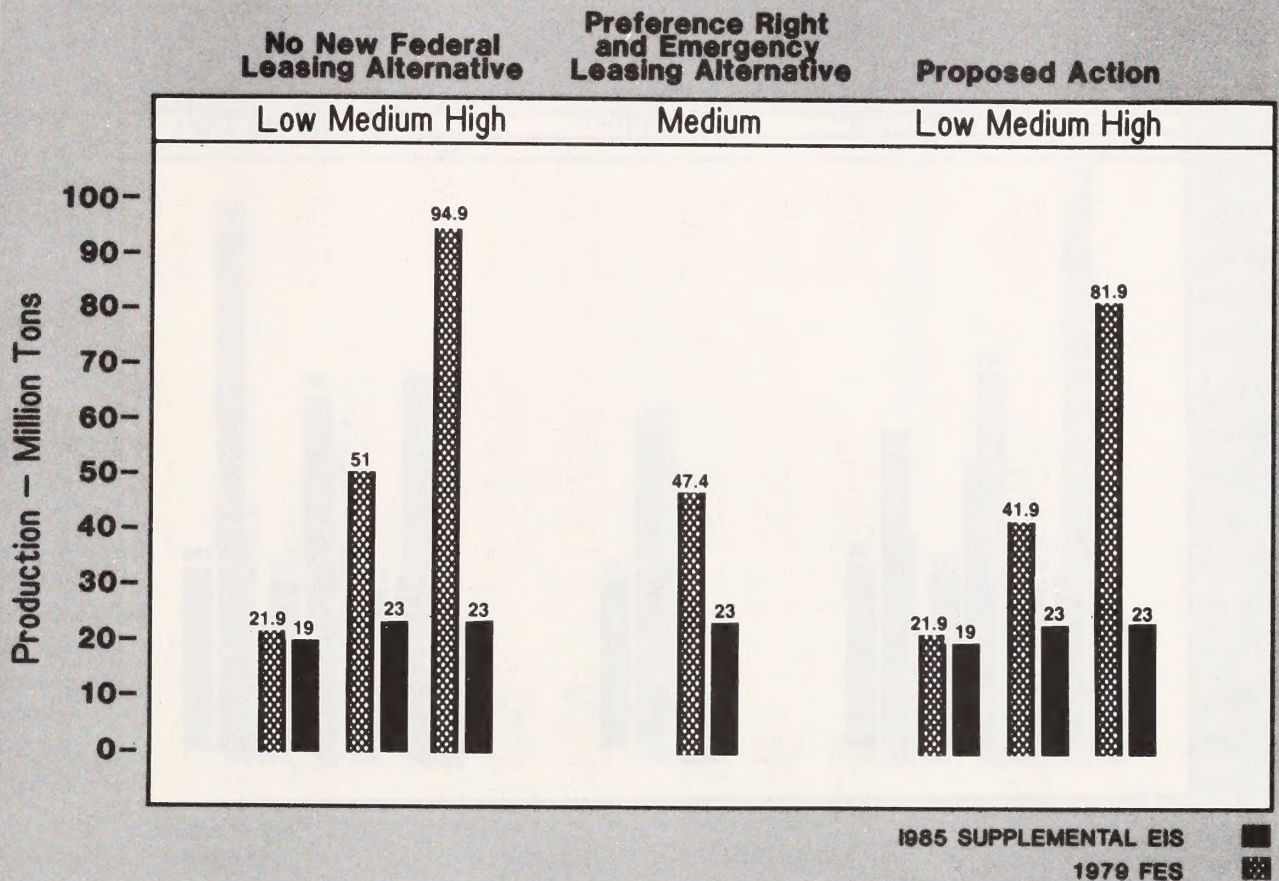


Figure 3-2a

The most important factor is the electricity growth rate, which accounts for most of the differences. The 1979 low production level used 3.5 percent for 1977-85 and 1985-90. This rate is high, particularly for the 1977-85 period, because of the severe recession. The 1985-90 rate used in the 1979 projections is about the rate used in the current forecasts for the same period.

In addition to differences in the average electric power consumption growth rate, regional differences are important. The recession most severely affected the midwestern industrial states, greatly reducing the demand for electricity in this region and accounting for most of the differences in production patterns between the 1979 FES forecasts and the current situation and forecasts.

Another important factor is nuclear capacity. For 1985, the 1979 FES used 84 gigawatts for the low production level, which will probably be just about correct. For 1990, the low figure was 150 gigawatts, which will be much too high according to actual 1985 expectations of 98 to 106 gigawatts.

PRODUCTION FORECASTS

POWDER RIVER COAL REGION 1990 COAL PRODUCTION ESTIMATE 1979 FES versus 1985 Supplemental EIS

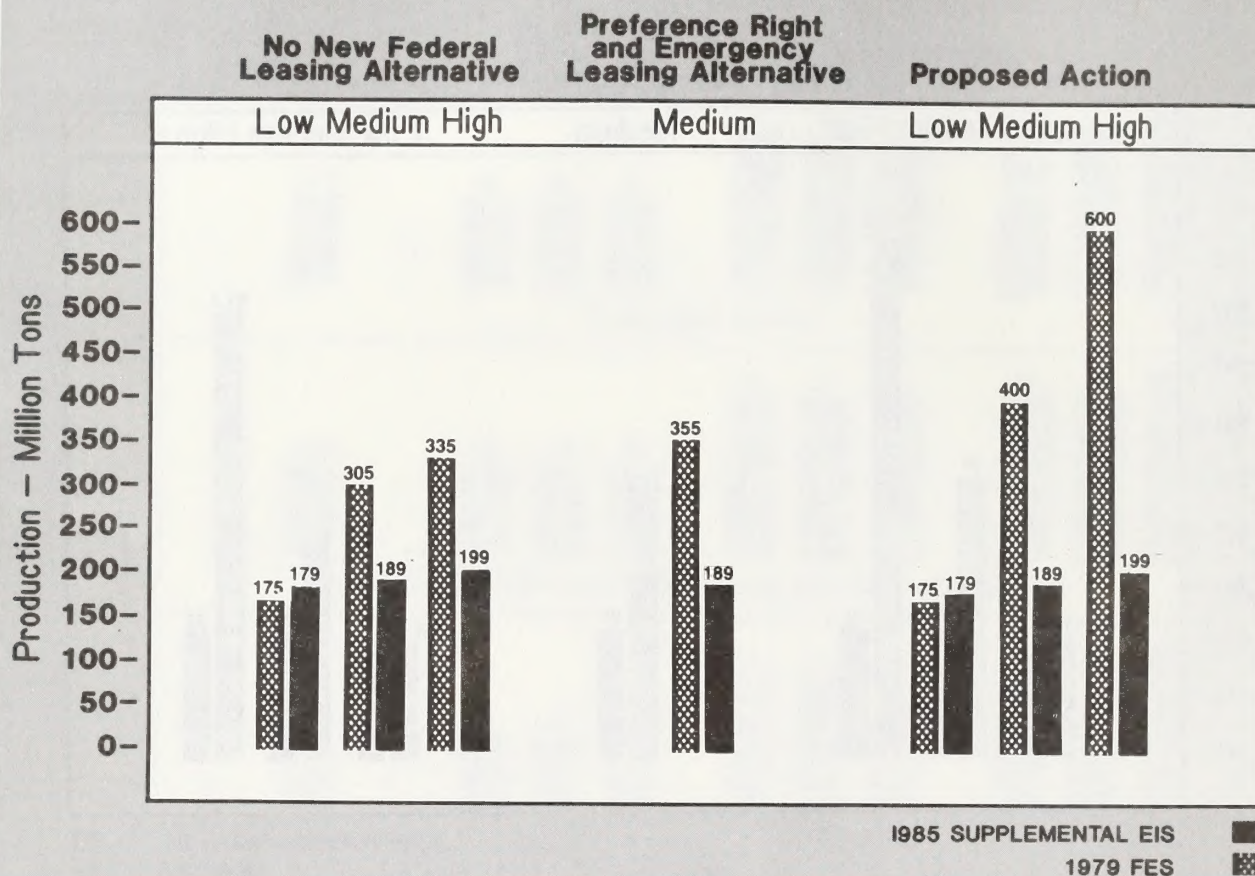


Figure 3-2b

Other factors that are less important nationally but that have large regional impacts are demand for synthetic fuels and exports. The 1979 low production level synthetic fuels demand forecasts are a little too high, whereas the exports are too low. The synthetic fuels demand mostly affects the Western regions, whereas the exports tend to most affect the Appalachian regions. Once again, the differences in assumptions contributed to the differences in forecasts.

Transportation costs can also cause significant shifts in regional production. Higher transportation costs favor high heat content coal close to the demand point. Low transportation costs favor coal with low production and utilization costs. Current transportation costs are much higher than expected in the 1979 FES, accounting for some of the differences between eastern and western coal production.

PRODUCTION FORECASTS

GREEN RIVER-HAMS FORK COAL REGION

1990 COAL PRODUCTION ESTIMATE 1979 FES versus 1985 Supplemental EIS

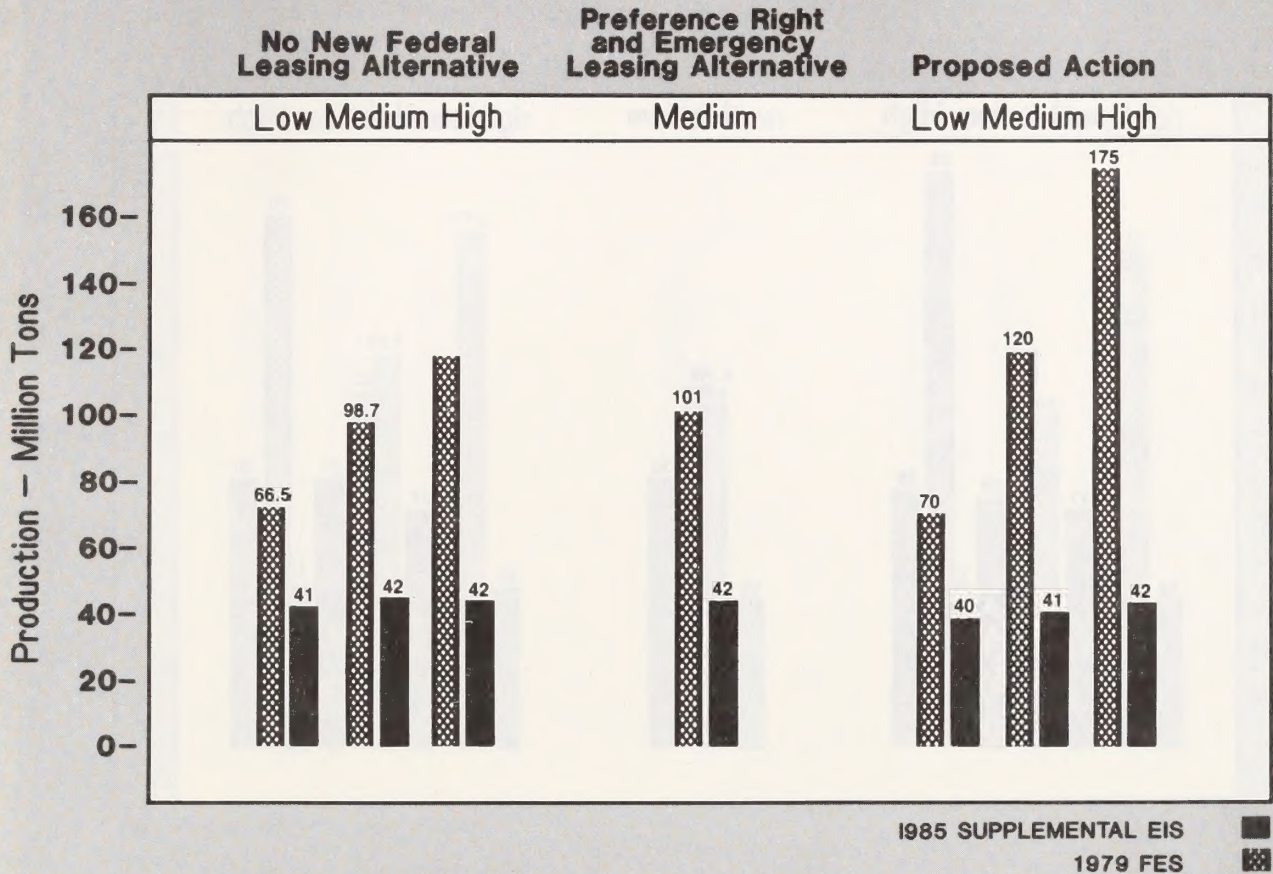


Figure 3-2c

COMPARISON OF CURRENT FORECASTS WITH SUMMER 1985 DATA RESOURCES, INC. FORECASTS

Table 3-11 presents the summer 1985 coal production forecasts by Data Resources, Inc. (DRI) (1985) and shows two basic points of comparison with the current forecasts. The overall demand for coal is in the upper part of the range of BLM forecasts, and the market shares favor the Midwestern and Western regions more than BLM's forecasts. The DRI forecasts use demands similar to BLM's. Assumptions concerning nuclear and other steam fuel capacities for electricity generation are similar to the assumptions for the BLM high production level.

COMPARISON WITH DOE/EIA'S 1984 ANNUAL OUTLOOK FOR U.S. COAL

Table 3-12 summarizes the Department of Energy, Energy Information Agency's (EIA) forecasts as presented in its Annual Outlook for U.S. Coal (DOE/EIA

PRODUCTION FORECASTS

UINTA-SOUTHWESTERN UTAH COAL REGION

1990 COAL PRODUCTION ESTIMATE 1979 FES versus 1985 Supplemental EIS

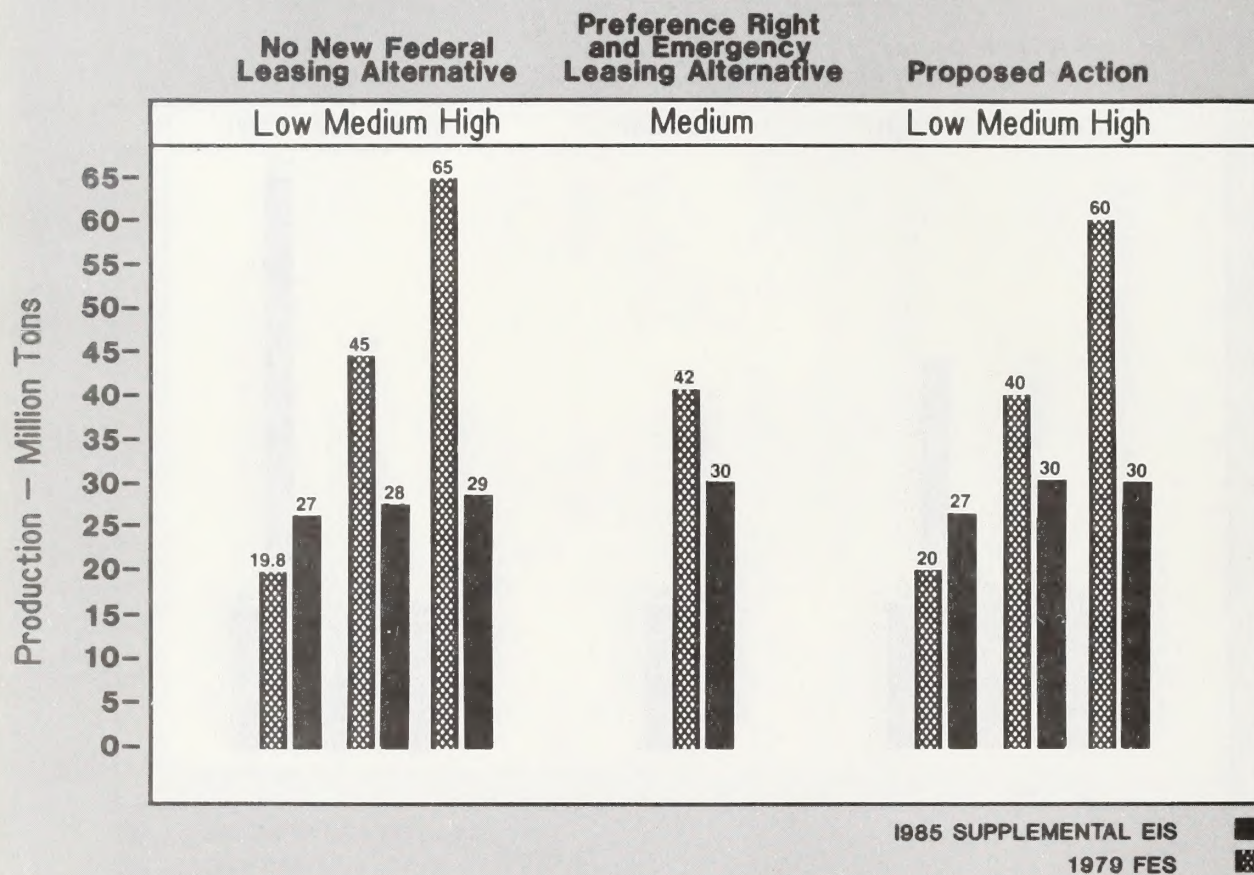


Figure 3-2d

1985a). The regional breakdown in the Annual Outlook differs somewhat from that used by BLM, but the following conclusions can be made. The forecasts for the Western regions are about the same as the BLM medium production level forecasts. EIA's forecasts for the Appalachian and Midwestern regions are higher than BLM's, especially in the Midwest. Table 3-13 compares EIA, DRI, and National Coal Association 1995 mid-level coal production forecasts.

CONCLUSIONS FROM THE FORECAST COMPARISONS

Two main conclusions can be drawn from the above comparisons. First, current BLM forecasts are similar to other leading coal forecasts. Second, differences in assumptions and the uncertainties surrounding these assumptions suggest that none of these forecasts can be summarily rejected in favor of others. This reasoning and the examination of the 1979 FES forecasts reveal that this supplemental EIS should evaluate the full range of forecasts. Even with all the changes that have occurred since 1979, the low forecasts have

PRODUCTION FORECASTS

SAN JUAN RIVER COAL REGION 1990 COAL PRODUCTION ESTIMATE 1979 FES versus 1985 Supplemental EIS

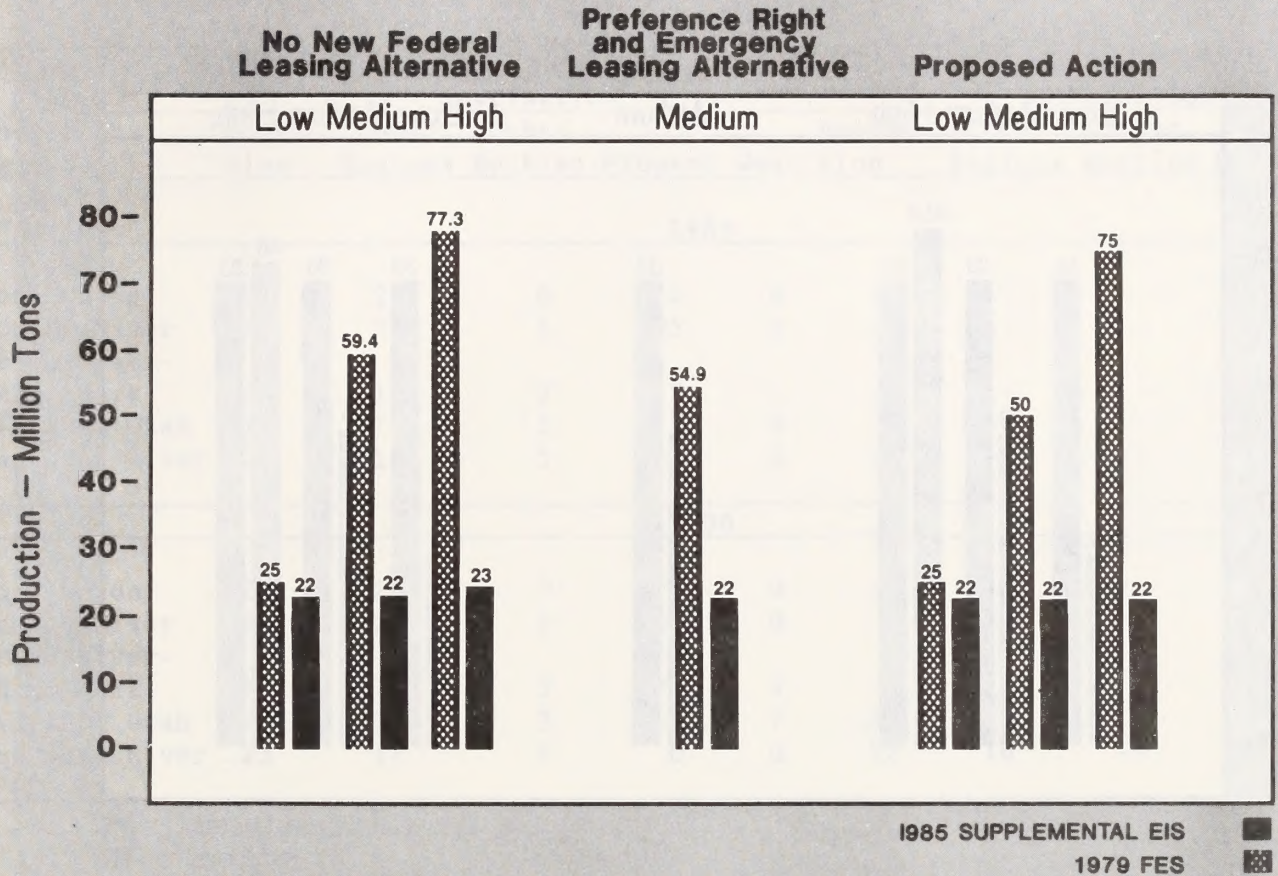


Figure 3-2e

been close to reality except in the Green River-Hams Fork Region and the Alabama Subregion. Although the future remains unknown, an evaluation of BLM forecasts for the three production levels is likely to cover the range of impacts that actually result.

PRODUCTION FORECASTS

ALABAMA COAL SUBREGION 1990 COAL PRODUCTION ESTIMATE 1979 FES versus 1985 Supplemental EIS

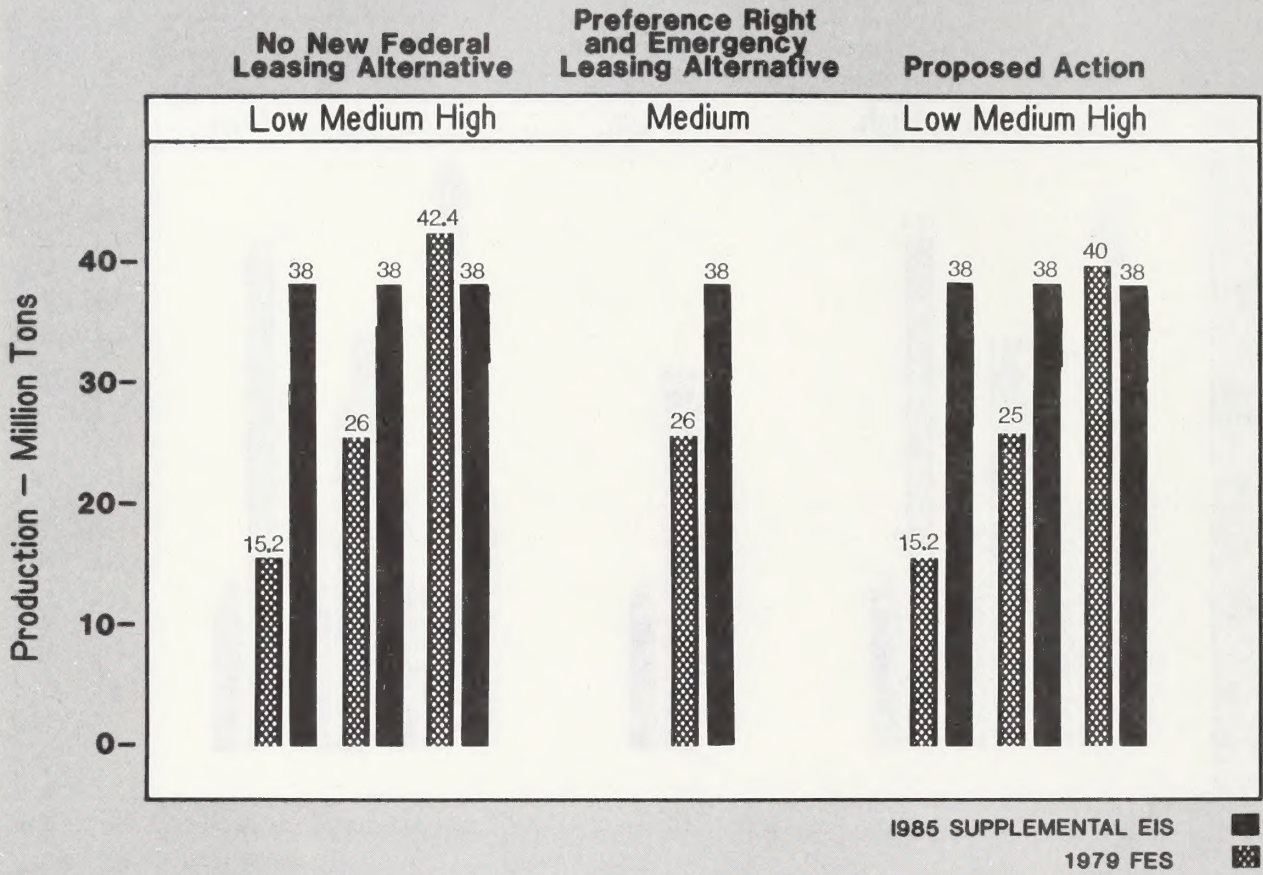


Figure 3-2f

PRODUCTION FORECASTS

TABLE 3-8
COAL DISTRIBUTION FROM WESTERN LEASING REGIONS
HIGH PRODUCTION LEVEL
(million tons/year)

No New Federal Leasing Destination						Proposed Action* Destination				
Source Region	Produc- tion	Local Regions	Other Rockies	Midwest	West	Produc- tion	Local Regions	Other Rockies	Midwest	West
1985										
Fort Union	21	21	0	0	0	--	--	--	--	--
Powder River	140	25	5	105	5	--	--	--	--	--
Green River- Hams Fork	34	12	2	19	1	--	--	--	--	--
Uinta-SW Utah	18	11	1	2	4	--	--	--	--	--
San Juan River	22	16	5	0	1	--	--	--	--	--
1990										
Fort Union	23	23	0	0	0	--	--	--	--	--
Powder River	199	27	6	166	0	--	--	--	--	--
Green River- Hams Fork	42	12	3	23	4	--	11	5	--	3
Uinta-SW Utah	29	18	3	1	7	30	17	4	2	--
San Juan River	23	17	6	0	0	22	16	--	--	--
1995										
Fort Union	22	32	0	0	0	--	--	--	--	--
Powder River	271	36	9	208	18	256	--	--	209	2
Green River- Hams Fork	40	8	5	18	8	42	10	--	20	7
Uinta-SW Utah	34	22	1	1	10	50	20	--	--	28
San Juan River	31	19	7	0	5	29	21	8	--	0
2000										
Fort Union	25	25	0	0	0	--	--	--	--	--
Powder River	326	40	10	238	38	318	--	7	249	22
Green River- Hams Fork	53	12	7	15	19	47	--	4	18	13
Uinta-SW Utah	36	26	1	1	8	60	29	--	--	29
San Juan River	37	20	13	0	4	34	21	--	--	0

*Tonnages for the Proposed Action are shown only where they differ from those for No New Federal Leasing.

Note: Totals may not add exactly due to independent rounding.

PRODUCTION FORECASTS

TABLE 3-9
COMPARISON OF REGIONAL MARKET SHARES
AT YEAR 2000 PRODUCTION LEVELS
(Percent of Total U.S. Production)

Region	Estimated 1985	No New Federal Leasing			Proposed Action		
		Low	Medium	High	Low	Medium	High
Appalachian	49	48	48	47	47	48	48
Midwestern	22	20	18	18	20	18	17
Western	29	32	34	35	33	34	35
Fort Union	2	2	2	2	2	2	2
Powder River	17	20	22	23	20	21	22
Green River-Hams Fork	4	3	3	3	3	3	3
Uinta-SW Utah	3	2	3	2	4	4	4
San Juan River	3	3	3	3	3	2	2
Alabama Subregion	4	4	4	4	4	4	4

TABLE 3-10
REGIONAL PRODUCTION FORECASTS FROM THE 1979 FES
(million tons/year)

	Actual Production	Low Production Level		Medium Production Level		High Production Level	
	1977*	1985	1990	1985	1990	1985	1990
Total U.S.	688	990	1114	1116	1521	1188	1856
Appalachian	390	427	386	440	445	454	479
Midwestern	163	249	336	273	402	282	441
Western	135	314	382	404	674	452	937
Fort Union	10	18	22	20	21	23	35
Powder River	72	140	174	205	396	232	603
Green River- Hams Fork	19	90	106	112	150	129	178
Uinta-SW Utah	14	26	25	26	28	26	28
San Juan River	8	21	34	23	58	23	72
Alabama	21	21	14	21	14	21	14

*Actual production for the Western regions was estimated for 1978.

PRODUCTION FORECASTS

TABLE 3-11
DRI COAL PRODUCTION FORECASTS
(million tons/year)

	1985	1990	1995	2000	2005
Total U.S.	881	1,022	1,152	1,400	1,673
Appalachian	422	478	516	604	681
Midwestern	194	210	238	250	302
Western	266	325	389	534	678
Fort Union	23	28	30	32	35
Powder River	150	210	261	365	476
Green River-Hams Fork	33	36	35	47	56
Uinta-SW Utah	21	21	23	29	29
San Juan River	26	25	29	47	60
Alabama Subregion	32	39	37	42	44

Source: Data Resources, Inc. 1985.

TABLE 3-12
EIA COAL PRODUCTION FORECASTS
(million tons)

	1985	1990	1995
Total U.S.	889	1,057	1,221
Appalachian	443	503	562
Midwestern	193	229	271
Western	263	324	389
Northern Great Plains	191	229	275
Rocky Mountains and Southwest	67	88	109
Northwest and Alaska	5	7	5
Alabama	28	36	38

Note: The Northern Great Plains Region consists of an area similar to the area included in the Powder River and Fort Union regions and the Wyoming portion of Green River-Hams Fork Regions. The Rocky Mountains and Southwest Region consists of an area similar to the area included in the Uinta-Southwestern Utah and San Juan River regions, the Colorado portion of the Green River-Hams Fork Region, and most of nonfederal Western regions. The Northwest and Alaska Region makes up the remainder of the nonfederal western regions.

Source: DOE/EIA 1985a

PRODUCTION FORECASTS

TABLE 3-13
COMPARISON OF 1995 COAL PRODUCTION FORECASTS
(million tons)

	BLM	EIA	DRI
Total U.S.	1,136	1,221	1,152
Appalachian	548	562	516
Midwestern	214	271	238
Western	374	389	389
Northern Great Plains	272	275	317
Rocky Mountains and Southwest	100	109	64
Northwest and Alaska	3	5	8
Alabama	43	38	37

Note: The Northern Great Plains Region consists of an area similar to the area included in the Powder River and Fort Union regions and the Wyoming portion of Green River-Hams Fork Regions. The Rocky Mountains and Southwest Region consists of an area similar to the area included in the Uinta-Southwestern Utah and San Juan River regions, the Colorado portion of the Green River-Hams Fork Region, and most of nonfederal Western regions. The Northwest and Alaska Region makes up the remainder of the nonfederal western regions.

	BLM	NCA
Total U.S.	1,136	1,121
East of Mississippi River	654	678
West of Mississippi River	482	443

Sources:

BLM - Medium production level under the Proposed Action.

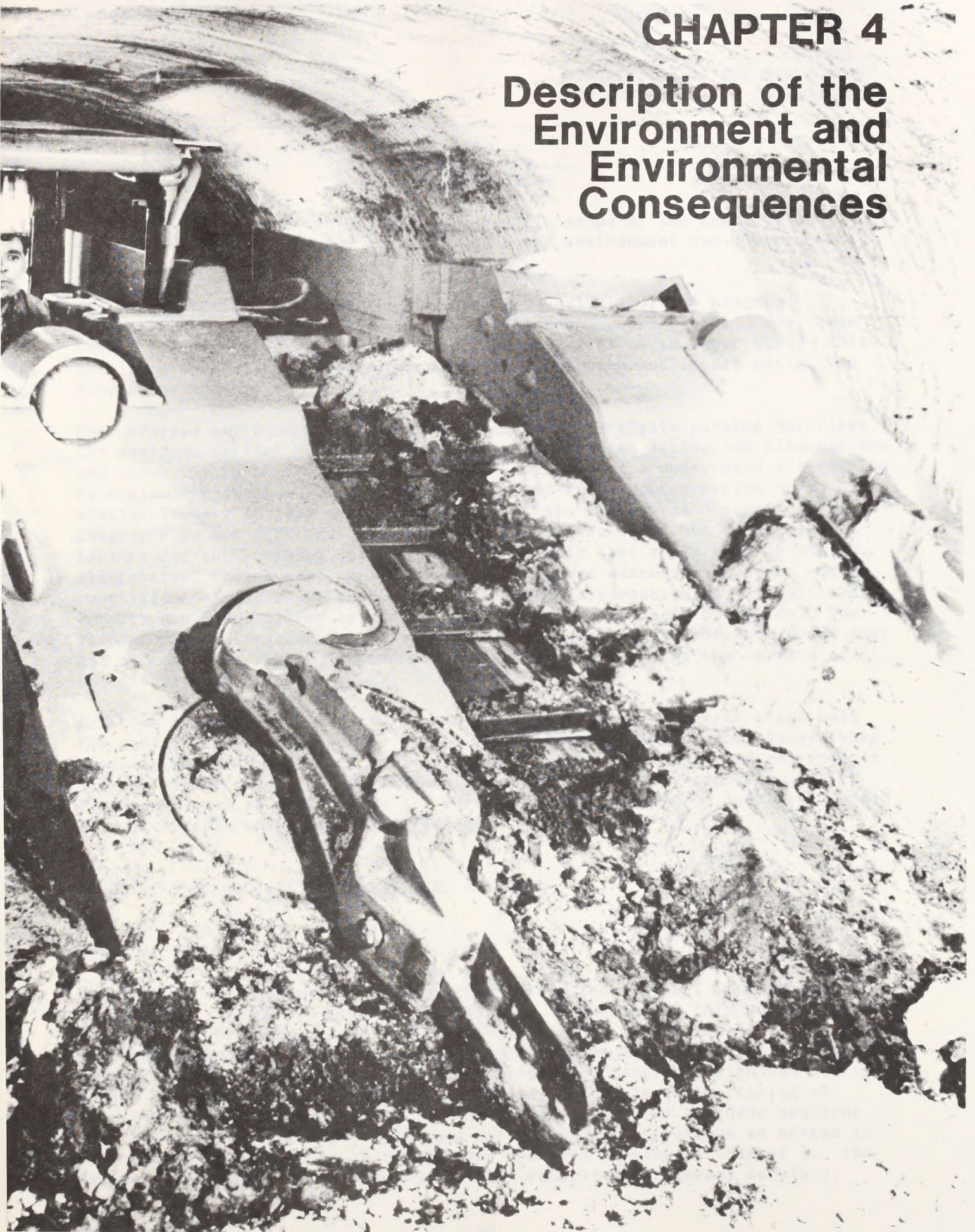
EIA - DOE/EIA (1985) Annual Outlook for U.S. Coal

DRI - Data Resources, Inc. (1985) Coal Review - Summer 1985

NCA - National Coal Association (1984), Coal Markets in the Future

CHAPTER 4

Description of the Environment and Environmental Consequences



INTRODUCTION

Chapter 4 consists of two major sections: (1) scope of the analysis and analytical approach and (2) description of the environment and environmental impact analysis.

The first section describes the scope of the analysis of the program alternatives, the major issues raised in the scoping process, and how these issues are addressed in the supplemental EIS or will be in later EISs. This section also outlines the general analytical approach and impact estimation procedures.

The affected environment and environmental impact analysis portion describes the environment that would be affected by the Proposed Action and alternatives and shows the results of the analysis for each resource under each alternative by region. Because Leasing by Application and the Proposed Action would have similar impacts (as discussed in Chapter 3), the tables and discussion in Chapter 4 do not distinguish between the two alternatives but simply show impacts for the Proposed Action. General impacts that apply to each region, alternative, target year, and production level are addressed first to reduce repetition. Impacts are then analyzed for each alternative by region. Where impacts would not differ by alternative, they are discussed by region. The resources are discussed in the same order for consistency, but this order does not represent a priority of importance. Chapter 5 compares the impacts of alternatives by resource.

As shown in Chapter 3, impacts of a federal coal leasing program exist only for certain regions in certain target years because existing and planned mine capacity may meet projected coal demand even if no additional federal coal is leased. Therefore, the environmental impact analysis only addresses the "impact points" shown in Table 4-1 where a federal program to lease coal would have measurable environmental effects.

SCOPE OF THE ANALYSIS AND ANALYTICAL APPROACH

Scope of the Analysis

This EIS is a programmatic supplement to assess the national impacts of four federal coal management program alternatives. The scope of this supplement is specifically directed toward the exclusive analysis of program-level impacts. A broad statement of overall impacts of the program will enable the Department of the Interior to make decisions concerning broad program design and national policy questions. This supplemental EIS does not analyze the leasing of specific amounts of coal or the leasing of specific sites. These analyses will be conducted for lease sales and for individual operations as stated in the discussion of tiering in the Purpose and Need section of Chapter 1. The impacts would apply to all land ownership--federal (BLM, Forest Service),

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-1
COAL IMPACT POINTS
(Points at which coal production under Preference Right and Emergency Leasing, Leasing by Application*, and the Proposed Action would differ from No New Federal Leasing)

Fort Union Region			
None			
Powder River Region			
Preference Right and Emergency Leasing		Proposed Action/Leasing by Application	
1995	Low (Wyoming and Montana)	1995	Low (Wyoming and Montana)
	Medium (Wyoming and Montana)		Medium (Wyoming and Montana)
	High (Wyoming only)		High (Wyoming only)
2000	Medium (Wyoming only)	2000	Low (Wyoming and Montana)
	High (Wyoming and Montana)		Medium (Wyoming only)
			High (Wyoming and Montana)
Green River-Hams Fork Region			
Preference Right and Emergency Leasing		Proposed Action/Leasing by Application	
1990	Low (Wyoming and Colorado)	1990	Low (Wyoming and Colorado)
	Medium (Wyoming and Colorado)		Medium (Wyoming and Colorado)
	High (Wyoming and Colorado)		High (Wyoming and Colorado)
1995	High (Wyoming and Colorado)	1995	High (Wyoming and Colorado)
2000	Medium (Colorado only)	2000	Low (Wyoming and Colorado)
	High (Wyoming and Colorado)		Medium (Wyoming and Colorado)
			High (Wyoming and Colorado)
Uinta-Southwestern Utah Region			
Preference Right and Emergency Leasing		Proposed Action/Leasing by Application	
1990	Low (Colorado and Utah)	1990	Low (Colorado and Utah)
	Medium (Colorado and Utah)		Medium (Colorado and Utah)
	High (Utah only)		High (Colorado and Utah)
1995	Low (Utah only)	1995	Low (Colorado and Utah)
	Medium (Colorado and Utah)		Medium (Colorado and Utah)
	High (Colorado and Utah)		High (Colorado and Utah)
2000	Low (Utah only)	2000	Low (Colorado and Utah)
	Medium (Colorado and Utah)		Medium (Colorado and Utah)
	High (Colorado and Utah)		High (Utah only)
San Juan River Region			
Preference Right and Emergency Leasing		Proposed Action/Leasing by Application	
1990	High	1990	High
1995	Low	1995	Low
	Medium		Medium
			High
		2000	Low
			Medium
			High
Alabama Subregion			
None			

*Leasing by Application and the Proposed Action would have similar impacts as discussed in Chapter 3. Therefore the tables and discussion in Chapter 4 do not distinguish between the two alternatives but simply show impacts for the Proposed Action.

INTRODUCTION

state, Indian, and private. Issues of particular concern to Native Americans are discussed in a separate section although impacts in specific areas are also identified where warranted.

The impact analysis addresses the following cycles of coal development: exploration and mine development, surface and subsurface extraction and beneficiation, and transportation. The analysis in this supplemental EIS does not cover the impact of conversion facilities because development of new conversion facilities cannot be shown to depend on new federal coal leasing at the programmatic level. Where conversion facilities are proposed in connection with leasing or mining of federal coal, the approval of such facilities will require compliance with the National Environmental Policy Act. One observation, however, can be made: because this supplemental EIS projects coal production to be less than that projected by the 1979 FES (BLM 1979a), fewer impacts would result from the fewer conversions that might occur.

Later site-specific analyses of individual tracts and regional EISs will evaluate potential impacts of leasing. The location and type of new facilities is better addressed at a later review and decision point in site-specific or regional analyses when more specific data exists.

Five major issues emerged from the Department of the Interior's analysis of comments on the scope of the supplement. The five issues and the Department's response in this supplemental EIS are outlined in the Decision on the Scope of the Supplement to the 1979 FES (USDI 1984b) and are summarized below.

- Relationships of the supplement to ongoing changes in the coal program. Recent changes to the coal program resulting from 1984 reports by the Commission on Fair Market Value Policy for Federal Coal Leasing (Linowes and others 1984) and the Office of Technology Assessment (OTA 1984) were analyzed in separate environmental assessments, and findings of no significant impact were made (Appendix 10). The supplemental EIS does, however, discuss interrelationships of the components of the coal program, including any environmental effects of the recently proposed changes (Appendix 6). All regulatory changes will be after the filing of the final supplemental EIS and passage of the 30-day waiting period.
- Scope of market analysis. To underscore the importance of market analysis, it is highlighted in Chapter 3 of this supplemental EIS and is further supported by a separate technical report (BLM 1985b), which has been updated and included as Appendix 8.
- Assessment of reclamation success on surface-mined western coal lands. A technical appendix (Appendix 5) on reclamation and erosion control on surface mined lands was developed by the Office of Surface Mining Reclamation and Enforcement (OSM) for the supplemental EIS to present summary results based on research and experience from existing mines.
- Impacts of the Department's policy to pursue coal exchanges. To address this topic, an explanation is included in Chapter 1 of this supplemental EIS (see Appendix 9).

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- Programmatic alternatives. Programmatic alternatives that the Department is analyzing in the supplemental EIS are described in Chapter 2. Other alternatives considered and the rationale for not including them in the supplemental EIS are given in Chapter 2--Proposed Action and Alternatives and discussed in many comment responses (see Chapter 7).

Analytical Approach

This supplemental EIS contains a general analysis of the environmental impacts of four alternative federal programs at three coal production levels in six coal regions. The analysis focuses on the impacts at low, medium, and high levels of coal production for target years 1990, 1995, and 2000 in each region. The impacts for each of these points under No New Federal Leasing were analyzed and documented. For the Proposed Action and the other alternatives, the analysis identified impact points (Table 4-1) at which projected production would differ from the No New Federal Leasing Alternative, which was used as the baseline. Only the impacts at these points were analyzed and documented in the supplemental EIS. Impacts stated for these points would be associated only with total coal production in a target year, not with the difference in production between the Proposed Action or alternative and No New Federal Leasing. Chapter 5, Comparative Analysis, documents the differences in impacts between No New Federal Leasing and the Proposed Action and other alternatives and also addresses impacts outside the federal coal production regions.

Two other factors must be considered in a discussion of the analytical approach to this supplemental EIS:

- Coal production might be the same under different alternatives, but the impacts would not necessarily be the same because of (1) shifts within and between regions that affect where coal is mined and specific resources, (2) the substitution of more expensive coal for less expensive coal, and (3) the substitution of more environmentally acceptable coal for coal extractable only at higher environmental costs.
- Although impacts can be estimated, they cannot be accurately determined at the programmatic level because most are site specific and depend upon local conditions at time of mining, such as the type of habitat being disturbed and the condition of the surrounding area or the population level of a specific community and its existing housing.

Because the Proposed Action would continue a modified program to manage federal coal and is not a specific proposal to develop coal, the analyses assumed three levels of possible production needed to meet national demands. If implemented, the Proposed Action would begin procedures that would consider new leasing and developing of coal reserves. Decisions under the Proposed Action to lease or not to lease would also influence to a degree the development of federal reserves under leases previously issued by the Department of the Interior. Therefore, three levels (low, medium, and high) of possible coal demand were used as a basis for impact assessment and were developed to attempt to predict a range of impacts that could possibly result from proceeding with the Proposed Action. The reader of this supplemental EIS should keep in mind that even though this EIS projects impacts, implementing the Proposed Action would not ensure that any of these impacts would occur,

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only that they or similar impacts might occur if more federal coal reserves are leased and developed. In some cases, projected impacts are highly unlikely to occur because of legal bars to new coal leasing in areas where projected impacts would occur.

In addition to the Proposed Action and No New Federal Leasing, two other alternatives are analyzed: (1) Preference Right and Emergency Leasing and (2) Leasing by Application. Because production levels for Leasing by Application were judged to be similar to those for the Proposed Action (see Chapter 3), the impacts for this alternative are also assumed to be the same throughout the analysis. Because all analysis for the Proposed Action applies equally to Leasing by Application, the later alternative will not be discussed separately in this chapter. Assumptions for the production levels under each alternative are outlined in Chapter 3.

Regional multipliers, developed from regional coal EISs, were used to predict resource impacts whenever possible. Where data did not permit the use of regional multipliers, national multipliers were used. Appendix 4, Methodologies, compares 1985 multipliers with the environmental loading factors used in the 1979 EIS (BLM 1979a). The multipliers are based on units of coal production associated with a particular resource attribute. The multiplier is applied to the amount of coal production for each production level, time period, and alternative except for the No New Federal Leasing Alternative. Estimating procedures for resources are also given in Appendix 4. Assumptions for specific resources are given in the individual resource sections in Chapter 4.

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AFFECTED ENVIRONMENT

The area of influence for socioeconomic analysis for each coal region differs somewhat from the coal region itself because coal is not expected to be mined in all parts of the regions. Appendix 4, Socioeconomic Methodologies, defines the socioeconomic areas of influence.

Fort Union Region

The Fort Union Region has a relatively small population, low population density, and fairly small communities. See Appendix 4, for the counties making up the region's area of influence. Total population of this area in 1982 was estimated at 191,200, with population density averaging 6.9 persons per square mile (Table 4-2a). The largest community is Bismarck, North Dakota, with a 1980 population of 61,000 in its urbanized area. Four other communities have populations ranging from 5,000 to 16,000.

Except for the Bismarck area, communities in the area of influence have limited infrastructures. Medical and social services, shopping opportunities, and recreation facilities are particularly deficient. Public safety has been seen as a problem in some of the communities experiencing recent growth (BLM 1982a).

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-2a
POPULATION AND ECONOMIC CHARACTERISTICS FOR THE AREA OF INFLUENCE*
FORT UNION COAL REGION

Total Population	191,200
Total Area (square miles)	27,801
Population per square mile	6.9
Per capita personal income	\$10,956
Per capita personal income as a percent of U.S. average	99

Economic Factors	Employment	% of Total	Earnings (thousands)	% of Total
Agriculture	11,014	12	\$ 99,410	7
Mineral Industry	4,973	5	151,553	10
Construction	7,912	8	217,459	14
Manufacturing	3,246	3	66,910	4
Transportation, communication, and utilities	7,014	7	214,211	14
Trade	18,878	20	247,771	16
Finance, insurance, and real estate	3,044	3	60,408	4
Services	17,087	18	238,225	16
Nonfarm proprietors	8,582	9	**	
Government	14,817	15	227,842	15
TOTAL	96,567		1,523,789	

See Appendix 4 for data sources.

*Data is for counties expected to be affected by coal development under either the no leasing or leasing alternatives.

**Employment and earnings figures are calculated on different bases. Nonfarm proprietors' earnings are included in each sector, whereas employment is reported as a separate figure.

The area's economy is based on agriculture and mining. Agriculture consists mainly of wheat farming in the northern and eastern parts and cattle ranching with some irrigated farming in the southern and western parts.

Mineral developments include coal, oil, and gas. Because the coal is lignite, it is used mainly in mine-mouth facilities, and little is being exported from the region. Table 4-2a shows that the mineral industry has become an important component of the economy, making up 5 percent of employment and 10 percent of earnings. Employment and population in parts of the area of influence not involved in mineral development are continuing on a gradual long-term decline.

Local attitudes toward coal development can be described as qualified approval. Residents of smaller communities would like to see the economic base expanded to add a buffer for years when agricultural production is down. But residents of rural areas express strong concerns about the conservation of agriculture, the protection of air and water quality, and such adverse impacts of development as crowding and increased crime (BLM 1982a).

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Powder River Region

The Powder River Region has a small population, low population density, and relatively small communities. (See Appendix 4, Socioeconomic Methodologies, for the counties making up the area of influence.) The area of influence had an estimated 1982 population of 228,200 and an average density of 4.7 persons per square mile (Table 4-2b). Casper, Wyoming, with a 1980 population of 59,000 in its urbanized area, is the largest community. Five other communities have populations ranging from 5,000 to 15,000.

Infrastructure development in the area presents a mixed picture. Those communities affected by recent mineral development have expanded their infrastructure to meet further population growth. Most communities in areas untouched by mining have more limited facilities that would require significant expansion for growth. Inadequate medical service is the infrastructural problem most often mentioned in area communities (BLM 1981b).

TABLE 4-2b
POPULATION AND ECONOMIC CHARACTERISTICS FOR THE AREA OF INFLUENCE
POWDER RIVER COAL REGION*

Total Population	228,200			
Total Area (square miles)	48,223			
Population per square mile	4.7			
Per capita personal income	\$12,590			
Per capita personal income as a percent of U.S. average	113			

Economic Factors	Employment	% of Total	Earnings (thousands)	% of Total
Agriculture	9,895	8	\$ 29,509	1
Mineral Industry	18,221	15	603,611	27
Construction	12,010	10	351,585	16
Manufacturing	3,538	3	91,959	4
Transportation, communication, and utilities	5,948	5	168,097	8
Trade	21,693	18	335,441	15
Finance, insurance, and real estate	3,669	3	75,040	4
Services	15,727	13	272,458	12
Nonfarm proprietors	11,191	10	**	
Government	<u>18,263</u>	15	<u>285,333</u>	13
TOTAL	120,155		2,213,033	

See Appendix 4 for data sources.

*Data is for counties expected to be affected by coal development under either the no leasing or leasing alternatives.

**Employment and earnings figures are calculated on different bases. Nonfarm proprietors' earnings are included in each sector, whereas employment is reported as a separate figure.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Agriculture and mining provide most of the area's economic base. Cattle ranching and irrigated hay farming dominate agriculture. Oil, gas, and coal are the leading mineral products. Mining, including refining, provides 15 percent of total employment and 27 percent of earnings in the area, ranking first. But the current energy market slump has lowered near-term employment and population expectations in most of the area. Areas outside the influence of mineral development have remained fairly stable in population and employment.

Local attitudes toward coal development vary. Attitudes in Wyoming, where coal mining has recently grown, are favorable toward development (BLM 1979c) although some might oppose changes that development brings. Current depressed economic conditions in Wyoming tend to increase the support for development. Attitudes in Montana areas are mixed, with support in towns and mixed opposition and support in rural areas. Opposition in Montana appears to center on changes in the rural lifestyle that would result from growth and the high degree of transiency among recent coal-related populations.

Green River-Hams Fork Region

The Green River-Hams Fork Region has the smallest total population of the six regions, the lowest density, and the smallest communities. Appendix 4, Socioeconomic Methodologies, shows the counties in its area of influence. This area has an estimated total 1982 population of 140,800 and a population density of 3.9 persons per square mile (Table 4-2c). The area's largest community is Rock Springs, Wyoming, with an estimated 1985 population of 25,000 in the city and surrounding area. Five other communities have populations ranging from 5,000 to 13,000.

Infrastructure development in this area has benefitted from recent mining-induced growth. Most of the larger communities have infrastructures to meet population increases, but infrastructures of smaller communities would be strained by a large population influx. Medical and social services are most often in short supply, and fire protection in many communities is given a below-average rating under the national fire insurance rating system.

Mining, agriculture, and tourism are the area's economic mainstays. Coal, oil and gas, trona, and uranium are the main mineral products. Cattle, sheep, and irrigated hay make up most of the agricultural production. The tourist industry is important in scattered locations that provide skiing, water sports, and dispersed recreation. Mining provides 22 percent of total employment and 37 percent of earnings, ranking first. As in the Powder River Region, slumping energy markets have depressed the local economies in all parts of the area except in the few places where tourism has maintained the local base. Because mineral development has pervaded the entire region, virtually no parts of the area are unaffected by the current economic conditions in mining.

Attitudes toward coal development display the same qualified approval as described for the Fort Union Region, with current economic conditions raising the level of approval. Residents recognize that development of the area's mineral resources is the only likely means of economic recovery and further growth. On the other hand, experience of past mining slumps, reinforced by the present one, makes residents skeptical toward proposals lacking a promise

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of stability. Protection of the area's natural beauty and recreation opportunities is rated important to both the tourist economy and the local lifestyle.

TABLE 4-2c
POPULATION AND ECONOMIC CHARACTERISTICS FOR THE AREA OF INFLUENCE
GREEN RIVER-HAMS FORK COAL REGION*

Total Population	140,800			
Total Area (square miles)	36,119			
Population per square mile	3.9			
Per capita personal income	\$11,747			
Per capita personal income as a percent of U.S. average	106			

Economic Factors	Employment	% of Total	Earnings (thousands)	% of Total
Agriculture	3,803	5	\$ 13,202	1
Mineral Industry	15,687	22	532,289	37
Construction	6,520	9	180,468	13
Manufacturing	1,652	2	38,822	3
Transportation, communication, and utilities	6,129	8	172,268	12
Trade	12,014	16	162,270	11
Finance, insurance, and real estate	2,126	3	36,519	3
Services	8,102	11	121,823	8
Nonfarm proprietors	6,167	9	**	
Government	<u>11,117</u>	15	<u>176,527</u>	12
TOTAL	73,317		1,434,188	

*Data is for counties expected to be affected by coal development under either the no leasing or leasing alternatives.

**Employment and earnings figures are calculated on different bases. Nonfarm proprietors' earnings are included in each sector, whereas employment is reported as a separate figure.

Uinta-Southwestern Utah Region

Though similar to the other western coal regions in demographic characteristics, the Uinta-Southwestern Utah Region has perhaps the most uneven population distribution, with a few areas of relative concentration surrounded by expanses of virtually uninhabited land. (See Appendix 4 for the counties included in the area of influence.) The area had a total estimated 1982 population of 215,600 and a population density of 7.9 persons per square mile (Table 4-2d). Grand Junction, Colorado is the area's largest community, having a population of 57,000 within its urbanized area. Three other communities have populations ranging from 5,000 to 9,000.

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TABLE 4-2d
POPULATION AND ECONOMIC CHARACTERISTICS FOR THE AREA OF INFLUENCE
UINTA-SOUTHWESTERN UTAH COAL REGION*

Total Population	215,600
Total Area (square miles)	27,120
Population per square mile	7.9
Per capita personal income	\$9,712
Per capita personal income as a percent of U.S. average	87

Economic Factors	Employment	% of Total	Earnings (thousands)	% of Total
Agriculture	6,810	7	\$ 21,392	1
Mineral Industry	9,481	10	325,291	21
Construction	6,687	7	167,456	11
Manufacturing	5,355	5	91,801	6
Transportation, communication, and utilities	5,408	5	142,486	9
Trade	20,284	20	249,616	16
Finance, insurance, and real estate	4,105	4	69,232	5
Services	16,279	16	253,002	16
Nonfarm proprietors	10,575	11	**	
Government	15,431	15	227,487	15
TOTAL	100,415		1,547,763	

See Appendix 4 for data sources.

*Data is for counties expected to be affected by coal development under either the no leasing or leasing alternatives.

**Employment and earnings figures are calculated on different bases. Nonfarm proprietors' earnings are included in each sector, while employment is reported as a separate figure.

Infrastructure development in many communities is barely adequate to serve present populations. Problems prevail in medical services, water treatment, sewage and solid waste disposal, and fire protection. Recent developments absorbed the existing surplus but are insufficient for future needs.

Mining is the dominant economic activity, but tourism is growing and federal military and civilian operations are important in local areas. Coal, oil and gas, uranium, and other metals are or have been important in different parts of the area. A long history of mining booms and slumps, including the current slump, have caused persistent employment and population instability. But a stimulus for a growing tourist industry is produced by 10 national parks, recreation areas, and monuments; other natural and scenic areas; ski resorts; and abundant white water. Agriculture, mostly livestock grazing and related hay production, is widespread but overshadowed by other developments.

Current economic conditions have created a more favorable attitude toward more coal development, but the support is heavily qualified by the area's experience. Infrastructure problems caused by recent growth have spurred a strong demand for more orderly development. As in the Green River-Hams Fork region, skepticism resulting from mining's past instability and the value placed on the area's natural beauty and recreation opportunities are important local concerns.

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San Juan River Region

The San Juan River Region is similar to the other western coal regions in having a low population density, but it also has the lowest per capita personal income because of a high percentage of Native Americans in its population.. (Appendix 4, Socioeconomic Methodologies, shows the counties included in the area of influence.) The area had a total estimated 1982 population of 317,400 and a population density of 7.0 persons per square mile. The area's largest community is Farmington, New Mexico, with an estimated population of 40,000 in the city and surrounding area (Table 4-2e). Eight other communities have populations ranging from 5,000 to 18,000.

Rapid growth in the 1970s placed strains on the infrastructures of some communities, but recent improvements have provided enough capacity for present and near-future needs. Most of the larger communities can accommodate population increases, but the smaller communities and Indian reservations would require additions to their infrastructures to handle a large population influx.

TABLE 4-2e
POPULATION AND ECONOMIC CHARACTERISTICS FOR THE AREA OF INFLUENCE
SAN JUAN RIVER COAL REGION*

Total Population	317,400			
Total Area (square miles)	45,051			
Population per square mile	7.0			
Per capita personal income	\$6,955			
Per capita personal income as a percent of U.S. average	63			

Economic Factors	Employment	% of Total	Earnings (thousands)	% of Total
Agriculture	3,628	4	\$ 44,125	3
Mineral Industry	8,312	9	280,781	18
Construction	7,705	8	183,016	12
Manufacturing	3,527	4	69,654	4
Transportation, communication, and utilities	7,096	8	209,055	13
Trade	14,615	16	181,165	11
Finance, insurance, and real estate	2,245	2	34,075	2
Services	16,932	18	228,493	14
Nonfarm proprietors	6,036	6	**	
Government	23,077	25	370,653	23
TOTAL	93,173		1,601,017	

See Appendix 4 for data sources.

*Data is for counties expected to be affected by coal development under either the no leasing or leasing alternatives.

**Employment and earnings figures are calculated on different bases. Nonfarm proprietors' earnings are included in each sector, whereas employment is reported as a separate figure.

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Mining and agriculture make up the area's economic base, with mining the dominant activity. Oil and gas, coal, uranium, and other metals are or have been important in different parts of the area. Agriculture consists mainly of livestock grazing and irrigated farming. The Navajo Indian Irrigation Project in association with the Navajo Products Industries has developed over 40,000 acres of irrigated farmland and has the potential to develop over 110,000 acres of irrigated farmland.

The area's scenic and archaeological attractions have induced a small but growing tourist industry. Table 4-2e shows that mining is an important sector of the economy, accounting for 9 percent of total employment and 18 percent of earnings. As a result, the current energy slump has significantly affected the economy, and, as in the Green River-Hams Fork and Uinta-Southwestern Utah regions, the effect has spread throughout the area of influence.

Those communities experiencing recent mineral-related growth are now better equipped to deal with the resulting social changes. As in the other western coal regions, current economic conditions have created some support for more coal development. Protection of the area's natural beauty, recreation opportunities, and air and water quality, however, remain important local concerns.

Alabama Subregion

Unlike the western coal regions, the Alabama Subregion has a large population, high population density, and larger communities. (See Appendix 4, Socioeconomic Methodologies, for the counties in the area of influence.) The area had a total estimated 1982 population of 898,200 and a population density of 231 persons per square mile. Birmingham, Alabama, with a 1980 urbanized area population of 606,000 is the dominant community (Table 4-2f). Three other communities have populations ranging from 5,000 to 75,000.

The area's larger communities have well-developed infrastructures that can accommodate growth at the expected rate. Expansion required by baseline growth is included in local development plans.

The area's diversified economic base includes manufacturing, trade, service, mining, and agriculture. Birmingham is a major steel-producing center and a regional center for trade and services. Coal is the main mineral product, but a potential exists for oil and gas development. Agricultural products include cotton, a variety of other crops, and livestock. Industrial recession has raised area unemployment to the two-digit level, and, under the projected moderate baseline growth, the jobless rate would remain relatively high.

Local attitudes toward coal development, conditioned by long experience with the coal industry, can be described as highly qualified approval. Recession and high unemployment have increased the support for further development. Environmental problems resulting from past coal development, especially strip mines, have nevertheless created a strong demand for more effective environmental controls.

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TABLE 4-2f
POPULATION AND ECONOMIC CHARACTERISTICS FOR THE AREA OF INFLUENCE
SOUTHERN APPALACHIAN COAL REGION
ALABAMA SUBREGION**

Total Population	898,200			
Total Area (square miles)	3,889			
Population per square mile	231			
Per capita personal income	\$10,144			
Per capita personal income as a percent of U.S. average	91			

Economic Factors	Employment	% of Total	Earnings (thousands)	% of Total
Agriculture	5,019	1	\$ 26,501	*
Mineral Industry	11,177	3	404,280	6
Construction	18,630	4	417,582	6
Manufacturing	58,078	14	1,285,973	18
Transportation, communication, and utilities	29,206	7	846,034	12
Trade	86,667	21	1,263,904	18
Finance, insurance, and real estate	24,943	6	480,125	7
Services	86,238	21	1,274,712	18
Nonfarm proprietors	22,404	5	***	
Government	74,900	18	1,098,650	15
TOTAL	417,262		7,097,761	

See Appendix 4 for data sources.

*Less than 0.5 percent.

**Data is for counties expected to be affected by coal development under either the no leasing or leasing alternatives

***Employment and earnings figures are calculated on different bases. Nonfarm proprietors' earnings are included in each sector, whereas employment is reported as a separate figure.

IMPACTS

The general types of impacts that would result from either No New Federal Leasing or any of the alternative federal coal management programs are described in the General Impacts section. Later sections on each of the alternatives highlight differences in the degree and regional distribution of impacts. Impacts directly attributable to the choice of a federal coal program would occur only at impact points shown in Table 4-1.

General Impacts

Increased coal production would create both beneficial and adverse impacts in the local area surrounding new or expanded mines. Beneficial impacts would include (1) more jobs, (2) new business opportunities, (3) expanded shopping and entertainment facilities, and (4) increased local government revenues. Adverse effects would include (1) additions to local government capital and operating costs that sometimes create financial difficulties, (2) temporary

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shortfalls in housing and public services, (3) increased social problems and emotional stress, and (4) some changes in local lifestyles viewed as adverse by the local population.

The following elements of the socioeconomic environment could be affected by later federal coal leasing actions resulting from the decision on the federal coal management program alternatives:

- existing local business, industry, and agriculture;
- employment opportunities;
- population;
- housing and infrastructure;
- local government revenues and expenditures; and
- social structures and lifestyles.

Possible impacts to each of these elements are described in the following subsections. The discussions are general and are intended to define the categories of impacts and to show how they relate to one another. Combined with the numerical data presented in the sections on the alternatives, they portray the overall nature and size of changes in the economic and social environment that could result from program decisions. Appendix 4, Methodologies, describes the data sources and analysis methods used to make these estimates.

This analysis cannot be used by local officials to plan mitigation strategy. Coal program impacts would not be evenly spread over an area of influence but would be concentrated near the coal tracts that are leased. Information on specific tracts and the communities that would be affected by them is not included in a programmatic analysis of this type. Future regional and site-specific EISs will address environmental impacts at the community level.

Existing Local Business, Industry, and Agriculture. Coal development would affect local business, industry, and agriculture in three different ways: (1) resource conflicts, (2) secondary business growth, and (3) urbanization.

Resource conflicts would occur when the land, water, and human resources that would be affected by coal mining are now used in other economic activities. Agriculture is nearly always affected by surface mining because most coal deposits are on lands that are being farmed or grazed. The significance of this impact would depend on the presence of undeveloped agricultural land in each locale. Such land exists in many parts of the western coal regions, but little if any exists in the Alabama Subregion.

Secondary business growth would be stimulated (a) by local purchases of supplies and services by the mines and (b) by local spending of incomes by mine employees. The infusion of new money into an area would create new jobs and business opportunities, but the infusion of new money would often be accompanied by the less desirable effect of local inflation.

Urbanization refers to the expansion of communities onto nearby agricultural land, which may result in the loss of agricultural production and income. Because many communities lie in river valleys, particularly in the western coal regions, urbanization causes conversion of higher quality cropland to urban uses.

Employment Opportunities. Increased coal production would create more jobs. Increased employment would be needed to build mines and to mine and beneficiate coal. More jobs would be created by secondary business growth as described above.

Workers would be needed to build the mines before mining could begin. Construction would begin 2 to 5 years before a mine is in operation. But construction work occurs mainly in the mine development phase, and workers often have to move after a mine is fully developed. Therefore, increased construction employment would be short term although the number of construction workers is often larger in smaller communities than is the permanent operation workforce.

Although all coal mining creates jobs, fewer jobs are created by surface mines than by subsurface mines of equal productive capacity. The reason is that the massive draglines and shovels used in surface mining require much less labor for each ton of coal recovered than do the necessarily smaller machines used in subsurface mining. Therefore, the impacts to employment and earnings and related population growth in an area would depend partly on the type of mining.

The main sources of labor for western coal production, in addition to now unemployed miners, would be agricultural workers and to some degree construction workers. Workers skilled in heavy equipment operation could easily transfer their skills to surface mining. Operators of small farms and ranches often supplement their incomes by working in mining. Many agricultural workers are expected to respond to the higher income opportunities of coal mining and in so doing could reduce the supply and increase the cost of agricultural labor (BLM 1979a). The same phenomenon may occur with employees of local businesses.

The severity of competition for labor would vary by locale, depending on the size of the local labor force and the degree of immigration.

Because mining wages are higher than the average wage rates in most areas, coal development would tend to increase earnings at a higher rate than other employment and would thus provide a greater-than-proportional stimulus to local business growth.

Population. Population growth would result from employment growth. Population growth, in turn, could have many other economic, fiscal, and social impacts in the affected communities. Population growth is the best indicator of impact severity because most impacts on quality of life that would require

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mitigation would result from population growth. A large workforce is often needed for mine construction. Because a larger percentage of construction workers tend to be single or leave their families elsewhere, the population impact of construction is usually lower than the employment impact. Nevertheless, the size of the construction force would often be large enough to cause a temporary population bulge that would disappear when the project is completed.

A mine normally reaches full production after a few years, at which time its employment stabilizes and the resulting population growth ends. More operation than construction workers tend to be married and bring their families with them, so the proportionate population impact would be greater.

Increased population creates new secondary jobs. Depending on how many of the jobs are filled from the local labor force and in-migrating workers' families, a further increase of workers and population might result. Construction usually causes less secondary business growth than operation because of its temporary nature.

Housing and Infrastructure. The need for more housing would be in fairly direct proportion to population growth, affected only by variations in the percent of single workers and average family size. The need for more new housing, however, would depend on the existing vacant housing stock. Areas that have undergone a slump would generally need less new housing than areas that have had a stable or increasing population. The type of housing required would be strongly influenced by the temporary or permanent nature of new jobs, with temporary workers more likely to seek rental or mobile housing and permanent workers preferring single-family units. A temporarily large increase in mobile homes might be unavoidable in rapid growth areas until the permanent housing stock is expanded. The affect of new housing and expanded urban land use is addressed in the Agriculture section of Chapter 4.

Infrastructure refers to all the facilities and services provided by local governments. The basic list includes public schools, health care, public safety and fire protection, water supply, sewage and solid waste disposal, transportation facilities, libraries, parks and recreation facilities, and social services. Population growth increases the need for all types of infrastructure, usually in some proportion to the number of new people. Affected communities, however, might differ radically in the problems that might arise.

Economic and social change would have different impacts, requiring different mitigation measures, in three broad categories of impacted communities.

- (1) Places that have previously experienced growth, that have facilities and services in place, and that have existing staffs and budgets to deal with social services, planning, and land use. In these communities the problem of additional growth would probably be least severe, most easily solved, and far outweighed by the benefits.

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- (2) Places where local government has not been required to respond to rapid change. These communities would probably need to change patterns of residential and commercial development and priorities for government activity and spending; much social and political conflict and disruption of community fabric could result.
- (3) Small or isolated communities where few commercial and government facilities and services exist. Introducing coal development-induced populations into such areas would have major economic and social affects, including up-front expenditures for capital improvement needs beyond local funding capabilities and drastic changes in lifestyles (BLM 1979a).

Local Government Revenues and Expenditures. Expanded coal production would increase both the revenues and expenditures of local governments in the affected areas. Local revenues would be boosted by ad valorem, sales and use, and other taxes and fees paid by the mines; by further additions to these tax revenues resulting from population and secondary business growth; and by the parts of state severance taxes and federal royalties and bonuses that would be returned to the affected areas by state governments. On the other hand, local expenditures could be increased by the need to expand infrastructure and public services to meet the needs of increased population and business.

Because local tax rates vary by area, any appropriate environmental analysis will be included in the regional EISs. Nonlocal revenues--federal royalty and state severance tax revenues that would accrue to the states--are discussed in this supplemental EIS. (See Table 4-5 in the No New Federal Leasing section.) These revenues would be distributed to the affected local areas at the discretion of each state government.

Acquiring funds to expand infrastructure and public services would be a major problem to the third category of communities described under Housing and Infrastructure and could be a problem to communities in the other two categories, depending on the scale of the impacts and the size of existing infrastructures. The problem would be the result of the following:

1. Time lags between the identification of specific needs and the acquisition of facilities to meet those needs (lead time).
2. Time lags between the need to fund the development of the infrastructure and the generation of tax revenues from the additional population served (front-end funding).
3. Geographic differences between the location of coal development and the jurisdiction receiving increased infrastructure demands (jurisdictional mismatch).

Future tax lead time impacts can be mitigated only by implementing planning programs before energy resource development. Because of the general nature of the tax lead time problem, a concerted private, state, and federal approach would be required.

Although prospective revenues (from royalties, severance taxes, and local property and sales taxes) might be adequate to cover operating and capital investment costs over time, they could probably not be obtained when needed. Also, because uncertainties plague coal development and make it difficult to

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predict when or whether coal production will occur, even the eventual receipt of these revenues might not be guaranteed. This front-end funding deficiency or timely allocation of bonus payments could be met through federal or state loans, prepayment of taxes, federal grants, and direct financing of community facilities by coal developers (BLM 1979a). In addition, Utah and North Dakota (see Table 1-11) have legislation providing impact mitigation. These same mechanisms could also be used to overcome the jurisdictional mismatch problem.

Because Indian reservations are autonomous jurisdictions rather than subunits of the states, they cannot participate in some of the above financing arrangements. Reservations do not levy property and sales taxes, and they do not receive distributions of federal royalties. Eligibility for impact fund assistance from state governments depends on state law. For example, tribes are entitled to apply for coal board money in Montana. Assistance is thus mainly limited to federal programs through the Bureau of Indian Affairs and other agencies. BLM is not authorized to provide direct financial assistance. Royalties received from mineral development on Indian lands and other concessions negotiated with developers can be obtained when development occurs on the reservation.

Social Structures and Lifestyle. Population growth could lead to more local governmental formality and regulation because of growth pressures, and local governments could need more outside professional help in dealing with growth-related problems (Mountain West Research 1982). Coordination would be required, among authorities at the state, county, and municipal levels along with the cooperation of industrial firms.

The affected communities would become further segmented and diversified (Mountain West Research 1982), and length of residence, occupation, religious preference, and similar characteristics would become even more influential in defining relations among residents. Differences in values and experiences between some newcomers and long-term residents could cause animosity and mistrust, especially where existing social structures are strong and closely knit.

Retail expansion could improve employment opportunities for local residents who may have limited job experience. This economic activity could also increase the number of young residents leaving local high schools to enter the job market (Mountain West Research 1982).

Residents would feel less secure as more young men enter the area. Community life would become more impersonal. Stress attached to residence in a rapid-growth area would also be widespread. Crime would likely increase or exceed increases in population levels (Mountain West Research 1982).

Family instabilities (including child neglect and abuse, dissolutions, and conflict between spouses) would be more evident, particularly in residential living environments (such as mobile home parks) with limited space, lack of privacy, and few amenities. Housing shortfalls (supply, variety, and affordability) would intensify these problems (Mountain West Research 1982).

Although housing shortages could have major local social consequences, the presence of other services and facilities would also be important in the adaptation of communities and individuals to rapid growth. Quality of education could suffer if buildings, employees, and maintenance funds could not be provided in a timely manner.

Health care is also a typical problem in such settings. A lack of facilities, employees, and particularly emergency care treatment could cause hardships. Mental health services could be critical in reducing some of the adaptive problems of individuals. Timely availability of such services, along with housing, education, and health care, would almost certainly reduce the instabilities often associated with rapid growth.

These effects would be more pronounced in areas that have not recently experienced rapid growth; hostility toward newcomers might be greater and needed infrastructure and services might be lacking. But as construction nears completion and facilities become operational, the local social environment would become more stable and predictable.

The timespan for the stabilization of the social environment would depend on the use of mechanisms to provide up-front funds to shorten the lead time between the beginning of construction and the completion of facilities (see Chapter 1, Major Federal and State Laws Mitigating Coal Related Impacts, for a discussion of the mechanisms). As the local social environment stabilizes, an area may gain such benefits as better medical facilities and schools and increased cultural opportunities. These benefits tend to offset the problems experienced during the period of adjustment.

No New Federal Leasing

Coal production is expected to increase in the Western coal regions even without new federal leasing (see Table 3-1), and expanded production could bring more employment and population to the affected areas. These impacts cannot be predicted with geographic certainty because of possible variations in local economic conditions. If any areas of influence experience a future slump because of downturns in the noncoal parts of their economies, more coal production might only reduce their losses in employment and population. Therefore, the discussion below merely points to upward changes in the economic and social environments of the areas, and the significance of these impacts will be analyzed in the future regional coal EISs.

All of these discussions are based on the estimates of coal mining and beneficiation employment in Table 4-3, coal-related population in Table 4-4, and coal royalties and severance taxes in Table 4-5. (See Appendix 4, Socioeconomic Methodologies, for data sources and analysis methods.)

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TABLE 4-3
TOTAL COAL-RELATED EMPLOYMENT*

Fort Union Region**						
Production Level	No New Federal Leasing		Preference Right and Emergency Leasing**		Proposed Action**	
	Construction	Operation	Construction	Operation	Construction	Operation
<u>1990</u>						
Low	120	1,520	--	--	--	--
Medium	0	1,780	--	--	--	--
High	0	1,780	--	--	--	--
<u>1995</u>						
Low	120	1,650	--	--	--	--
Medium	120	1,720	--	--	--	--
High	180	1,720	--	--	--	--
<u>2000</u>						
Low	120	1,780	--	--	--	--
Medium	120	1,850	--	--	--	--
High	180	1,920	--	--	--	--

*Includes secondary employment.

**Figures are mostly for North Dakota but include insignificant numbers in Montana.

***Figures are shown only where they differ from those for No New Federal Leasing.

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TABLE 4-3 (continued)
TOTAL COAL-RELATED EMPLOYMENT*

Powder River Region						
Production Level	No New Federal Leasing		Preference Right and Emergency Leasing**		Proposed Action**	
	Wyoming	Montana	Wyoming	Montana	Wyoming	Montana
Construction Employment						
<u>1990</u>						
Low	2,930	0	2,660	0	2,460	0
Medium	3,070	140	2,730	70	2,520	70
High	4,640	270	4,160	270	3,610	270
<u>1995</u>						
Low	550	550	820	610	820	480
Medium	1,980	270	2,050	340	1,910	340
High	1,090	2,660	2,660	1,570	3,960	270
<u>2000</u>						
Low	550	550	820	610	820	480
Medium	1,980	270	2,050	340	1,910	340
High	1,090	2,660	2,660	1,570	3,960	270
Operation Employment						
<u>1990</u>						
Low	13,820	3,010	13,820	3,010	13,820	3,010
Medium	14,570	3,200	14,570	3,200	14,570	3,200
High	15,510	3,200	15,510	3,200	15,510	3,200
<u>1995</u>						
Low	17,860	3,010	17,490	2,920	17,210	2,920
Medium	18,800	3,390	18,330	3,290	18,050	3,290
High	21,900	3,570	21,250	3,570	20,490	3,570
<u>2000</u>						
Low	18,610	3,760	18,610	3,760	18,330	3,570
Medium	21,530	3,760	21,150	3,760	20,680	3,760
High	23,410	7,240	24,910	5,740	25,950	3,950

*Includes secondary employment. Some secondary employment related to Montana coal mining (shown under Montana) is expected to occur in Sheridan County, Wyoming.

**Figures are shown only where they differ from those for No New Federal Leasing.

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TABLE 4-3 (continued)
TOTAL COAL-RELATED EMPLOYMENT*

Green River-Hams Fork Region						
Production Level	No New Federal Leasing		Preference Right and Emergency Leasing**		Proposed Action**	
	Wyoming	Colorado	Wyoming	Colorado	Wyoming	Colorado
Construction Employment						
<u>1990</u>						
Low	0	0	0	200	0	200
Medium	0	0	0	130	0	200
High	0	330	0	330	0	0
<u>1995</u>						
Low	0	130	0	130	0	0
Medium	0	0	0	200	0	0
High	0	1,850	250	1,060	250	130
<u>2000</u>						
Low	0	130	0	130	0	0
Medium	0	0	0	200	0	0
High	0	1,850	250	1,060	250	130
Operation Employment						
<u>1990</u>						
Low	5,750	4,100	5,930	3,410	5,860	3,410
Medium	5,750	4,620	5,930	4,100	5,860	3,930
High	5,750	4,620	5,930	4,100	5,860	4,100
<u>1995</u>						
Low	4,890	4,100	4,890	4,100	4,820	4,100
Medium	4,890	4,620	4,890	4,620	4,820	4,620
High	4,890	5,690	5,930	5,310	6,550	4,100
<u>2000</u>						
Low	4,550	4,620	4,550	4,620	4,300	4,100
Medium	4,550	4,620	4,550	5,310	4,300	4,100
High	4,720	12,970	6,220	9,470	7,240	4,620

*Includes secondary employment.

**Figures are shown only where they differ from those for No New Federal Leasing.

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TABLE 4-3 (continued)
TOTAL COAL-RELATED EMPLOYMENT*

Uinta-Southwestern Utah Region						
Production Level	No New Federal Leasing		Preference Right and Emergency Leasing**		Proposed Action**	
	Utah	Colorado	Utah	Colorado	Utah	Colorado
Construction Employment						
<u>1990</u>						
Low	660	0	1,460	0	1,720	0
Medium	660	0	1,460	0	1,590	0
High	660	0	1,460	0	2,650	0
<u>1995</u>						
Low	260	260	0	260	790	0
Medium	260	130	0	0	790	130
High	260	0	0	0	790	530
<u>2000</u>						
Low	260	260	0	260	790	0
Medium	260	130	0	0	790	130
High	260	0	0	0	790	530
Operation Employment						
<u>1990</u>						
Low	11,490	4,750	12,040	4,200	12,600	3,640
Medium	11,490	5,310	12,040	5,870	14,270	3,640
High	11,490	5,870	12,040	5,870	14,270	3,640
<u>1995</u>						
Low	14,270	3,640	18,180	3,640	19,850	3,080
Medium	14,270	4,200	18,180	5,310	20,960	3,640
High	14,270	5,870	18,180	5,310	25,420	3,640
<u>2000</u>						
Low	15,390	4,750	17,060	4,750	23,190	3,080
Medium	15,390	4,750	17,060	5,310	24,310	4,200
High	15,390	5,870	17,060	5,310	28,770	5,870

*Includes secondary employment.

**Figures are shown only where they differ from those for No New Federal Leasing.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-3 (concluded)
TOTAL COAL-RELATED EMPLOYMENT*

San Juan River Region**						
Production Level	No New Federal Leasing		Preference Right and Emergency Leasing***		Proposed Action***	
	Construction	Operation	Construction	Operation	Construction	Operation
<u>1990</u>						
Low	240	3,820	120	3,820	120	3,820
Medium	420	3,820	300	3,820	300	3,820
High	480	3,960	540	3,820	420	3,820
<u>1995</u>						
Low	480	4,390	600	4,110	360	4,110
Medium	300	4,820	420	4,540	180	4,540
High	360	5,110	360	5,110	300	4,820
<u>2000</u>						
Low	480	5,540	600	5,540	360	4,970
Medium	300	5,540	420	5,540	186	4,970
High	360	5,980	360	5,980	300	5,540
Alabama Subregion						
Production Level	No New Federal Leasing		Preference Right and Emergency Leasing***		Proposed Action***	
	Construction	Operation	Construction	Operation	Construction	Operation
<u>1990</u>						
Low	370	19,590	--	--	--	--
Medium	370	19,590	--	--	--	--
High	370	19,590	--	--	--	--
<u>1995</u>						
Low	140	21,260	--	--	--	--
Medium	190	21,260	--	--	--	--
High	560	21,260	--	--	--	--
<u>2000</u>						
Low	140	21,920	--	--	--	--
Medium	190	22,100	--	--	--	--
High	560	23,900	--	--	--	--

*Includes secondary employment.

**Figures are mainly for New Mexico but include insignificant numbers in Colorado.

***Figures are shown only when they differ from those for No New Federal Leasing.

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TABLE 4-4
TOTAL COAL-RELATED POPULATION

Fort Union Region, North Dakota			
Production Level	No New Federal Leasing	Preference Right and Emergency Leasing*	Proposed Action
<u>1990</u>			
Low	4,170	--	--
Medium	4,540	--	--
High	4,540	--	--
<u>1995</u>			
Low	4,450	--	--
Medium	4,590	--	--
High	4,690	--	--
<u>2000</u>			
Low	4,730	--	--
Medium	4,870	--	--
High	5,110	--	--

Powder River Region**						
Production Level	No New Federal Leasing		Preference Right and Emergency Leasing***		Proposed Action***	
	Wyoming	Montana	Wyoming	Montana	Wyoming	Montana
<u>1990</u>						
Low	42,030	7,830	41,460	7,830	41,040	7,830
Medium	44,270	8,600	43,560	8,460	43,140	8,460
High	49,990	8,880	48,990	8,880	47,850	8,880
<u>1995</u>						
Low	47,570	8,960	47,160	8,860	46,430	8,580
Medium	53,000	9,370	51,920	9,270	50,900	9,270
High	59,210	14,840	60,770	12,560	61,520	9,860
<u>2000</u>						
Low	49,520	10,920	50,090	11,060	49,360	10,290
Medium	60,080	10,350	59,250	10,490	57,740	10,490
High	63,120	24,370	70,300	18,180	75,690	10,840

*North Dakota has no PRLAs.

**From 40 to 50 percent of the coal-related population in Montana is expected to live in Sheridan County, Wyoming.

***Figures are shown only where they differ from those for No New Federal Leasing.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-4 (continued)
TOTAL COAL-RELATED POPULATION

Green River-Hams Fork Region						
Production Level	No New Federal Leasing		Preference Right and Emergency Leasing*		Proposed Action*	
	Wyoming	Colorado	Wyoming	Colorado	Wyoming	Colorado
<u>1990</u>						
Low	14,550	10,270	14,950	8,990	14,790	8,990
Medium	14,550	11,490	14,950	10,500	14,790	10,210
High	14,550	12,080	14,950	10,860	14,790	10,270
<u>1995</u>						
Low	12,520	10,500	12,520	10,500	12,350	10,270
Medium	12,520	11,490	12,520	11,840	12,350	11,490
High	12,520	17,340	15,410	15,020	16,870	10,500
<u>2000</u>						
Low	11,710	11,730	11,710	11,730	11,140	10,270
Medium	11,710	11,490	11,710	13,470	11,140	10,270
High	12,110	34,450	17,030	24,790	18,490	11,730
Uinta-Southwestern Utah Region						
Production Level	No New Federal Leasing		Preference Right and Emergency Leasing*		Proposed Action*	
	Utah	Colorado	Utah	Colorado	Utah	Colorado
<u>1990</u>						
Low	28,790	13,030	31,530	11,720	33,310	10,410
Medium	28,790	14,340	31,530	15,650	37,010	10,410
High	28,790	15,650	31,530	15,650	38,910	10,410
<u>1995</u>						
Low	34,630	10,890	43,320	10,890	48,680	9,100
Medium	34,630	11,960	43,320	14,340	51,300	10,650
High	34,630	15,650	43,320	14,340	61,780	11,360
<u>2000</u>						
Low	37,250	13,510	40,700	13,510	56,540	9,100
Medium	37,250	13,270	40,700	14,340	59,160	11,960
High	37,250	15,650	40,700	14,340	69,640	16,600

*Figures are shown only where they differ from these for No New Federal Leasing.

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TABLE 4-4 (concluded)
TOTAL COAL-RELATED POPULATION

San Juan River Region, New Mexico			
Production Level	No New Federal Leasing	Preference Right and Emergency Leasing*	Proposed Action*
<u>1990</u>			
Low	10,180	9,990	9,990
Medium	10,470	10,280	10,280
High	10,880	10,660	10,470
<u>1995</u>			
Low	11,810	11,380	11,000
Medium	12,460	12,650	11,640
High	13,180	13,180	12,460
<u>2000</u>			
Low	14,310	14,500	12,870
Medium	14,020	14,830	12,580
High	15,050	15,050	14,020
Alabama Subregion			
Production Level	No New Federal Leasing	Preference Right and Emergency Leasing*	Proposed Action*
<u>1990</u>			
Low	42,700	--	--
Medium	42,700	--	--
High	42,900	--	--
<u>1995</u>			
Low	43,190	--	--
Medium	43,190	--	--
High	43,280	--	--
<u>2000</u>			
Low	43,450	--	--
Medium	43,450	--	--
High	44,320	--	--

*Figures are shown only where they differ from those for No New Federal Leasing.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-5
TOTAL COAL ROYALTY AND SEVERANCE TAX REVENUES
(thousand dollars)

North Dakota*			
	No New Federal Leasing	Preference Right and Emergency Leasing**	Proposed Action**
<u>1990</u>			
Low Production Level			
Royalties	\$ 2,100	--	--
Severance Taxes	16,200	--	--
Medium Production Level			
Royalties	2,600	--	--
Severance Taxes	19,600	--	--
High Production Level			
Royalties	2,600	--	--
Severance Taxes	19,600		
<u>1995</u>			
Low Production Level			
Royalties	2,800	--	--
Severance Taxes	17,900	--	--
Medium Production Level			
Royalties	2,900	--	--
Severance Taxes	18,700	--	--
High Production Level			
Royalties	2,900	--	--
Severance Taxes	18,700	--	--
<u>2000</u>			
Low Production Level			
Royalties	3,100	--	--
Severance Taxes	19,600	--	--
Medium Production Level			
Royalties	3,200	--	--
Severance Taxes	20,400	--	--
High Production Level			
Royalties	3,400	--	--
Severance Taxes	21,300	--	--

Note: Royalty figures represent the half share of federal coal royalties remitted to the states. See Royalties and Severance Tax section of Appendix 4 for procedures used to develop this table.

*Figures include insignificant amounts in Montana.

**Figures are shown only where they differ from those for No New Federal Leasing.

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TABLE 4-5 (continued)
TOTAL COAL ROYALTY AND SEVERANCE TAX REVENUES
(thousand dollars)

Montana			
	No New Federal Leasing	Preference Right and Emergency Leasing*	Proposed Action*
<u>1990</u>			
Low Production Level			
Royalties	\$ 11,500	--	--
Severance Taxes	88,300	--	--
Medium Production Level			
Royalties	12,200	--	--
Severance Taxes	93,800	--	--
High Production Level			
Royalties	12,200	--	--
Severance Taxes	93,800	--	--
<u>1995</u>			
Low Production Level			
Royalties	18,200	17,700	17,700
Severance Taxes	89,900	87,100	87,100
Medium Production Level			
Royalties	20,500	\$20,000	\$20,000
Severance Taxes	101,200	98,400	98,400
High Production Level			
Royalties	21,700	--	--
Severance Taxes	106,800	--	--
<u>2000</u>			
Low Production Level			
Royalties	23,100	--	22,000
Severance Taxes	114,000	--	108,300
Medium Production Level			
Royalties	23,100	--	--
Severance Taxes	114,000	--	--
High Production Level			
Royalties	44,500	35,300	24,300
Severance Taxes	219,500	173,900	119,700

Note: Royalty figures represent the half share of federal coal royalties remitted to the states. See Royalties and Severance Tax section of Appendix 4 for procedures used to develop this table.

*Figures are shown only where they differ from those for No New Federal Leasing.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-5 (continued)
TOTAL COAL ROYALTY AND SEVERANCE TAX REVENUES
(thousand dollars)

Wyoming						
	No New Federal Leasing		Preference Right and Emergency Leasing*		Proposed Action*	
	Powder River	Green River- Hams Fork	Powder River	Green River- Hams Fork	Powder River	Green River- Hams Fork
1990						
Low Production Level						
Royalties	\$52,800	\$16,500	--	17,200	--	\$17,200
Severance Taxes	223,400	74,800	--	77,600	--	77,600
Medium Production Level						
Royalties	55,700	16,500	--	17,200	--	17,200
Severance Taxes	235,600	74,800	--	77,600	--	77,600
High Production Level						
Royalties	59,300	16,500	--	17,200	--	17,200
Severance Taxes	250,800	74,800	--	77,600	--	77,600
1995						
Low Production Level						
Royalties	108,300	15,000	106,000	--	104,300	--
Severance Taxes	294,500	61,800	288,300	--	283,700	--
Medium Production Level						
Royalties	114,000	15,000	111,200	19,200	109,400	19,200
Severance Taxes	310,000	61,800	302,300	78,700	297,600	78,700
High Production Level						
Royalties	132,800	15,000	128,800	19,200	124,300	19,200
Severance Taxes	361,200	61,800	350,300	78,700	337,900	78,700
2000						
Low Production Level						
Royalties	114,500	15,100	--	--	112,800	14,400
Severance Taxes	310,900	57,200	--	--	306,200	54,300
Medium Production Level						
Royalties	132,500	15,100	130,200	--	127,300	14,400
Severance Taxes	359,500	57,200	353,300	--	345,400	54,300
High Production Level						
Royalties	144,000	15,900	153,300	24,200	159,700	24,200
Severance Taxes	390,000	60,100	416,100	91,500	433,300	91,500

Note: Royalty figures represent the half share of federal coal royalties remitted to the states.

*Figures are shown only where they differ from those for No New Federal Leasing. See Royalties and Severance Tax section of Appendix 4 for procedures used to develop this table.

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TABLE 4-5 (continued)
TOTAL COAL ROYALTY AND SEVERANCE TAX REVENUES
(thousand dollars)

Colorado						
	No New Federal Leasing		Preference Right and Emergency Leasing*		Proposed Action*	
	Green River- Hams Fork	Uinta- SW Utah	Green River- Hams Fork	Uinta- SW Utah	Green River Hams Fork	Uinta- SW Utah
<u>1990</u>						
Low Production Level						
Royalties	\$ 8,600	\$5,600	7,400	4,800	--	4,000
Severance Taxes	8,400	4,200	7,200	3,600	--	3,000
Medium Production Level						
Royalties	9,200	6,400	8,600	7,200	--	4,000
Severance Taxes	9,000	4,800	8,400	5,400	--	3,000
High Production Level						
Royalties	9,200	7,200	8,600	--	--	4,000
Severance Taxes	9,000	5,400	8,400	--	--	3,000
<u>1995</u>						
Low Production Level						
Royalties	9,600	4,400	--	--	--	3,500
Severance Taxes	8,400	3,000	--	--	--	2,400
Medium Production Level						
Royalties	10,300	5,200	--	7,000	--	4,400
Severance Taxes	9,000	3,600	--	4,800	--	3,000
High Production Level						
Royalties	12,300	7,900	11,600	7,000	9,600	4,400
Severance Taxes	10,800	5,400	10,200	4,800	8,400	3,000
<u>2000</u>						
Low Production Level						
Royalties	11,400	6,200	--	--	10,600	3,600
Severance Taxes	9,000	4,200	--	--	8,400	2,400
Medium Production Level						
Royalties	11,400	6,200	12,900	7,100	10,600	5,300
Severance Taxes	9,000	4,200	10,200	4,800	8,400	3,600
High Production Level						
Royalties	24,200	8,000	\$18,900	\$7,100	\$11,400	--
Severance Taxes	19,200	5,400	15,000	4,800	9,000	--

Note: Royalty figures represent the half share of federal coal royalties remitted to the states.
*Figures are shown only where they differ from those for No New Federal Leasing. See Royalties and Severance Tax section of Appendix 4 for procedures used to develop this table.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-5 (continued)
TOTAL COAL ROYALTY AND SEVERANCE TAX REVENUES
(thousand dollars)

Utah			
	No New Federal Leasing	Preference Right and Emergency Leasing*	Proposed Action*
<u>1990</u>			
Low Production Level Royalties	\$16,000	16,800	17,600
Medium Production Level Royalties	16,000	16,800	20,100
High Production Level Royalties	16,000	16,800	20,100
<u>1995</u>			
Low Production Level Royalties	21,800	27,900	30,500
Medium Production Level Royalties	21,800	27,900	32,300
High Production Level Royalties	21,800	27,900	39,300
<u>2000</u>			
Low Production Level Royalties	24,000	26,700	36,500
Medium Production Level Royalties	24,000	26,700	38,300
High Production Level Royalties	24,000	26,700	45,400

Note: Royalty figures represent the half share of federal coal royalties remitted to the states. See Royalties and Severance Tax section of Appendix 4 for procedures used to develop this table.

*Figures are shown only where they differ from those for No New Federal Leasing.

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TABLE 4-5 (continued)
TOTAL COAL ROYALTY AND SEVERANCE TAX REVENUES
(thousand dollars)

New Mexico*			
	No New Federal Leasing	Preference Right and Emergency Leasing**	Proposed Action**
<u>1990</u>			
Low Production Level			
Royalties	\$9,300	--	--
Severance Taxes	11,000	--	--
Medium Production Level			
Royalties	9,300	--	--
Severance Taxes	11,000	--	--
High Production Level			
Royalties	9,800	9,300	9,300
Severance Taxes	11,500	11,000	11,000
<u>1995</u>			
Low Production Level			
Royalties	11,300	10,400	10,400
Severance Taxes	13,000	12,000	12,000
Medium Production Level			
Royalties	12,600	11,700	11,700
Severance Taxes	14,500	13,500	13,500
High Production Level			
Royalties	13,400	--	12,600
Severance Taxes	15,500	--	14,500
<u>2000</u>			
Low Production Level			
Royalties	16,400	--	14,400
Severance Taxes	17,000	--	15,000
Medium Production Level			
Royalties	16,400	--	14,400
Severance Taxes	17,000	--	15,000
High Production Level			
Royalties	17,800	--	16,400
Severance Taxes	18,500	--	17,000

Note: Royalty figures represent the half share of federal coal royalties remitted to the states. See Royalties and Severance Tax section of Appendix 4 for procedures used to develop this table.

*Figures include insignificant amounts in Colorado.

**Figures are shown only where they differ from those for No New Federal Leasing.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-5 (concluded)
TOTAL COAL ROYALTY AND SEVERANCE TAX REVENUES
(thousand dollars)

Alabama			
	No New Federal Leasing	Preference Right and Emergency Leasing*	Proposed Action*
<u>1990</u>			
Low Production Level			
Royalties	\$2,500	--	--
Severance Taxes	14,100	--	--
Medium Production Level			
Royalties	2,500	--	--
Severance Taxes	14,100	--	--
High Production Level			
Royalties	2,500	--	--
Severance Taxes	14,100	--	--
<u>1995</u>			
Low Production Level			
Royalties	2,900	--	--
Severance Taxes	16,300	--	--
Medium Production Level			
Royalties	2,900	--	--
Severance Taxes	16,300	--	--
High Production Level			
Royalties	2,900	--	--
Severance Taxes	16,300	--	--
<u>2000</u>			
Low Production Level			
Royalties	3,000	--	--
Severance Taxes	17,000	--	--
Medium Production Level			
Royalties	3,100	--	--
Severance Taxes	17,400	--	--
High Production Level			
Royalties	3,400	--	--
Severance Taxes	19,200	--	--

Note: Royalty figures represent the half share of federal coal royalties remitted to the states. See Royalties and Severance Tax section of Appendix 4 for procedures used to develop this table.

*Figures are shown only where they differ from those for No New Federal Leasing.

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Because the increases in coal production and coal-related economic factors would generally continue through the year 2000, the discussion is limited to that year. See Table 3-7 for 1990 and 1995 coal production projections.

Fort Union Region. At the low production level under No New Federal Leasing, the Fort Union Region's total annual coal production would increase from 19.4 million tons in 1983 to 23 million tons by 2000. The resulting total coal-related employment would be 1,900, total coal-related population would be 4,700, and total annual coal royalty and severance tax revenues would be \$23 million.

By the year 2000 at the medium production level, annual coal production would rise to 24 million tons, total coal-related employment would be 1,970, total coal-related population would be 4,900, and total annual coal royalty and severance tax revenues would be \$24 million.

By 2000 at the high production level, annual coal production would reach 25 million tons, total coal-related employment would be 2,100, total coal-related population would be 5,100, and total annual coal royalty and severance tax revenues would be \$25 million.

Powder River Region. At the low production level, the Powder River Region's total annual coal production would increase from 122.5 million tons in 1983 to 238 million tons by 2000. The resulting total coal-related employment would be 23,500, total coal-related population would be 60,400, and total annual coal royalty and severance tax revenues would be \$563 million.

The region's coal-related employment would be smaller in relation to its production than in some other regions because all mining would be by surface methods, which require less employment per ton of coal produced than do subsurface methods. Coal-related population, however, would be proportionally greater than in some other regions because the fairly small present labor force would require that most new jobs be filled by in-migrating workers. Royalty and severance tax revenues would be higher relative to production than in most other regions because of the large percentage of federally owned coal and the higher state severance tax rates.

At the medium production level, annual coal production would rise to 269 million tons by 2000, total coal-related employment would be 27,500, total coal-related population would be 70,400, and total annual coal royalty and severance tax revenues would be \$629 million.

At the high production level, annual coal production would reach 326 million tons by 2000, total coal-related employment would be 34,400, total coal-related population would be 87,500, and total annual coal royalty and severance tax revenues would be \$798 million.

Green River-Hams Fork Region. At the low production level under No New Federal Leasing, total annual coal production in this region would increase from 29.9 million tons in 1983 to 35 million tons by 2000. The resulting total coal-related employment in 2000 would be 9,300, total coal-related population would be 23,400, and total annual coal royalty and severance tax revenues would be \$93 million. The region's coal-related population would be greater relative to its employment than in some other regions because the fairly small present labor force would require that most new jobs be filled by in-migrating workers.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

At the medium production level, total annual coal production would be 35 million tons by 2000. Total coal-related employment would be 9,200, total coal-related population would be 23,200, and total annual coal royalty and severance tax revenues would be \$93 million.

At the high production level, total annual coal production would rise to 53 million tons by 2000. Total coal-related employment would be 19,500, total coal-related population would be 46,600, and total annual coal royalty and severance tax revenues would be \$119 million.

Uinta-Southwestern Utah Region. At the low production level, total annual coal production in this region would increase from 15.8 million tons in 1983 to 34 million tons by 2000. The resulting total annual coal-related employment would be 20,700, total coal-related population would be 50,800, and total annual coal royalty revenues would be \$34 million. The region's coal-related employment would be greater relative to its production than in some other regions because most mining would be by subsurface methods, which require more employment per ton of coal produced than do surface methods. In addition, its coal-related population would be proportionally greater than in some other regions because the fairly small present labor force would require that most new jobs be filled by in-migrating workers.

At the medium production level, total annual coal production would be 34 million tons by 2000. Total coal-related employment would be 20,500, total coal-related population would be 50,500, and total annual coal royalty revenues would be \$34 million.

At the high production level, coal production would become 36 million tons by 2000, total coal-related employment would be 21,500, total coal-related population would be 52,900, and total annual coal royalty revenues would be \$37 million.

San Juan River Region. At the low production level, total annual coal production in the region would increase from 20 million tons in 1983 to 34 million tons by 2000. The resulting total coal-related employment would be 6,000, total coal-related population would be 14,300, and total annual coal royalty and severance tax revenues would be \$33 million.

At the medium production level, total annual coal production would be 34 million tons by 2,000. Total coal-related employment would be 5,800, total coal-related population would be 14,000, and total annual coal royalty and severance tax revenues would be \$33 million.

At the high production level, total annual coal production would become 37 million tons by 2000. Total coal-related employment would be 6,300, total coal-related population would be 15,000, and total annual coal royalty and severance tax revenues would be \$36 million.

Alabama Subregion. At the low production level, the Alabama Subregion's total annual coal production would increase from 23.6 million tons in 1983 to 46 million tons by 2000. The resulting total coal-related employment would be 22,000, total coal-related population would be 43,500, and total annual coal royalty and severance tax revenues would be \$20 million. The subregion's coal-related population would be less in relation to its employment than in

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most other regions because the large existing labor force and high unemployment reveal that most new jobs would be filled by residents.

At the medium production level, total annual coal production would rise to 47 million tons by 2000. Total coal-related employment would be 22,300, total coal-related population would be 43,500, and total annual coal royalty and severance tax revenues would be \$21 million.

By the year 2000 at the high production level, total annual coal production would rise to 52 million tons, total coal-related employment would be 24,500, total coal-related population would be 44,300, and total annual coal royalty and severance tax revenues would be \$23 million.

Preference Right and Emergency Leasing

More coal production and greater employment, population, and revenue increases would occur in federal coal regions under this alternative than under No New Federal Leasing, but the increases would not be spread evenly over the six coal regions. At different production levels, some regions would have increased impacts, whereas impacts in others would not change or would slightly decline. (See discussion in Chapter 3.) Table 4-6 shows the percent changes from No New Federal Leasing in coal production and economic impacts. Because the largest changes would occur in the year 2000, the analysis of percent changes are for 2000. (See Tables 4-3, 4-4, and 4-5 for changes in 1990 and 1995.) These changes are in coal-related impacts only and do not represent changes over baseline employment, population, and revenue in the regions. These changes would, however, be large enough to create potentially significant impacts at some production levels in the Uinta-Southwestern Utah and San Juan River regions. Moreover, even changes that would involve small percentages over an entire region could significantly affect communities near new mines.

Fort Union Region. Under Preference Right and Emergency Leasing, no changes would occur from No New Federal Leasing.

Powder River Region. At the low and medium production levels, a no change to a decrease of 1 percent in coal production would result in a change from +1 to -1 percent in the economic variables. At the high production level, total coal production would not change, but production would shift from Montana to Wyoming, leading to impact changes ranging from -2 percent in annual revenues to a +1 percent in employment and population.

Green River-Hams Fork Region. No change would occur at the low production level. At the medium production level, a 6 percent increase in production would result in a 9 and 10 percent increase in employment and population and a 3 percent increase in revenues. At the high production level, a coal production increase of 8 percent would increase revenues by 25 percent.

Revenues would show a different trend in the Green River-Hams Fork Region as production would shift proportionately from Colorado to Wyoming, where state severance taxes are nearly five times higher than those of Colorado. Thus, at the Proposed Action high production level, total production could drop by 11 percent from that under No New Federal Leasing, while revenues could rise by

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-6
COAL-RELATED ECONOMIC IMPACTS: PERCENT CHANGE
FROM NO NEW FEDERAL LEASING IN 2000

	Powder River	Green River- Hams Fork	Uinta- SW Utah	San Juan River
Preference Right and Emergency Leasing				
Low Production Level				
Coal production	0	0	+9	0
Employment	+1	0	+7	+2
Population	+1	0	+7	+1
Revenues	0	0	+8	0
Medium Production Level				
Coal production	-1	+6	+12	0
Employment	-1	+10	+9	+2
Population	-1	+9	+9	+6
Revenues	-1	+3	+12	0
High Production Level				
Coal production	0	+8	+6	0
Employment	+1	-13	+4	0
Population	+1	-10	+4	0
Revenues	-2	+25	+3	0
Proposed Action				
Low Production Level				
Coal production	-2	-6	+32	-12
Employment	-1	-10	+31	-11
Population	-1	-9	+29	-10
Revenues	-2	-5	+24	-12
Medium Production Level				
Coal production	-3	-6	+44	-12
Employment	-3	-8	+43	-12
Population	-3	-8	+41	-10
Revenues	-3	-5	+37	-12
High Production Level				
Coal Production	-2	-11	+67	-8
Employment	-1	-37	+67	-8
Population	-1	-35	+63	-7
Revenues	-8	+14	+57	-8

Note: The Fort Union Region and the Alabama Subregion are omitted from this table because no changes from No New Federal Leasing would occur under either alternative.

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14 percent. The shift of coal production from Colorado to Wyoming and from subsurface to surface mining, however, would result in a decrease of 13 percent in employment and of 10 percent in population from that under No New Federal Leasing.

When compared to No New Federal Leasing, surface mining in Wyoming at the year 2000 high production level would increase by 11 percent under Preference Right and Emergency Leasing, while Colorado surface production would be the same as under No New Federal Leasing. But Colorado surface production would decrease by 7 million tons from that under No New Federal Leasing. Because the construction employment factor for subsurface mining is two times higher than for surface mining and the operation employment factor is three times higher, employment would be less than under No New Federal Leasing as production would be only slightly less. The net change in production would be $+11 - 7 = 4$ million ton/year, while the employment change would be $[11 \times 1] - [7 \times 3] = 11 - 21 = -10$. The Proposed Action would follow the same trend except total production would be down.

Wyoming surface production would be 11 million tons more than under No New Federal Leasing, Colorado surface production would be 1 million tons less than under no New Federal Leasing, and subsurface production would be 16 million tons less than under no New Federal Leasing. Production would thus be $+11 - 1 - 16 = -6$, and employment would be $[+11 \times 1] - [1 \times 1] - [16 \times 3] = 11 - 1 - 48 = -38$. Because population estimates are derived from employment estimates, they would also follow the same trend.

Uinta-Southwestern Utah Region. At the low production level, a 9 percent increase in coal production would cause a 7 to 8 percent increase in the economic variables. At the medium production level, a 12 percent increase in production would cause a 9 to 12 percent increase in the economic variables. And at the high production level, a 6 percent increase in production would cause a 3 to 4 percent increase in the economic variables.

San Juan River Region. Although coal production would not change at the low, medium, and high production levels, the type of leases (Preference Right and Emergency) would cause the economic variables to increase by 1 to 6 percent.

Alabama Subregion. No changes would occur from No New Federal Leasing at any production level.

Proposed Action

The changes under the Proposed Action would be large enough to create four potentially significant impacts at some production levels in regions, and even the changes that would involve relatively small percentages over an entire region could significantly affect communities near new mines.

Fort Union Region. No change would occur from No New Federal Leasing at any of the production levels.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Powder River Region. At the low production level, coal production and revenues would decrease by 2 percent, and employment and population would decrease 1 percent. At the medium production level, all economic variables would decrease by 3 percent. At the high production level, a 2 percent decrease in coal production would result in an 8 percent decrease in revenues because of the shift in production from Montana to Wyoming. Employment and population, however, would decline by only 1 percent.

Green River-Hams Fork Region. At the low and medium production levels, coal production would decrease by 6 percent, and the other economic variables would decrease by 5 to 10 percent. At the high production level, coal production would decrease by 11 percent and shift from Colorado to Wyoming. A 75 percent reduction in subsurface mining would result in decreases of 37 percent in employment and 35 percent in population. The shifts, however, are predicted to increase revenue by 14 percent.

Uinta-Southwestern Utah Region. At all production levels, coal production would increase, resulting in increases in the economic variables. At the low production level, a 32 percent increase in production would cause an increase of from 24 to 31 percent in the economic variables. At the medium production level, a 44 percent increase would cause increase in the economic variables of from 37 to 43 percent. And at the high production level, a 67 percent increase in coal production would increase employment by 67 percent, population by 63 percent, and revenue by 57 percent.

San Juan River Region. At the low and medium production levels, coal production would decrease by 12 percent, resulting in decreases of from 10 to 12 percent in the economic variables. At the high production level, coal production would decrease by 8 percent, and the other economic variables would decrease by 7 or 8 percent.

Alabama Subregion. No changes would occur from No New Federal Leasing at any production level.

COMPARISON OF 1979 FES AND 1985 EIS PROJECTED IMPACTS

Table 4-7 compares projections of socioeconomic impacts of this supplemental EIS to projections of the 1979 FES (BLM 1979a). Impacts to employment, population, and royalty and severance tax revenues in 1990 at the medium production level of the 1985 Proposed Action average about 27 percent of the impacts projected for the 1979 FES Preferred Program. A total of 55,750 workers would be needed under the 1985 Proposed Action, which is 19 percent of the 291,024 workers needed under the 1979 Preferred Program. The 1985 Proposed Action would cause a population increase of 138,840 or 25 percent of the 557,600 projected for the 1979 Preferred Program. And the 1985 Proposed Action would generate about \$580 million in royalties and severance taxes, 27 percent of the \$2,135 million projected for the 1979 Preferred Program.

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TABLE 4-7
COMPARISON OF 1979 AND 1985 SOCIOECONOMIC PROJECTIONS
(based on the medium production level in 1990)

	1979 Projections			1985 Projections		
	No New Leasing	PRLAs Only	Preferred Program	No New Federal Leasing	Preference Right & Emergency Leasing	Proposed Action
Employment						
Fort Union	17,340	16,080	14,179	1,780	1,780	1,780
Powder River	126,392	146,771	156,941	20,980	20,570	20,360
Green River-Hams Fork	45,259	46,677	54,390	10,370	10,160	9,990
Uinta-Southwestern Utah	40,718	37,930	36,451	17,460	19,370	19,500
San Juan River	<u>32,983</u>	<u>31,382</u>	<u>29,063</u>	<u>4,240</u>	<u>4,120</u>	<u>4,120</u>
Total.....	262,692	278,840	291,024	54,830	56,000	55,750
Population						
Fort Union	82,600	80,100	75,700	4,540	4,540	4,540
Powder River	203,400	239,100	275,300	52,870	52,020	51,600
Green River-Hams Fork	69,400	69,100	85,000	26,040	25,450	25,000
Uinta-Southwestern Utah	79,300	71,900	71,300	43,130	47,180	47,420
San Juan River	<u>57,100</u>	<u>54,300</u>	<u>50,300</u>	<u>10,470</u>	<u>10,280</u>	<u>10,280</u>
Total.....	491,800	514,500	557,600	137,050	139,470	138,840
Royalty and Severance Tax Revenues (thousand dollars)						
Colorado			\$66,200			\$25,200
Montana			923,100			106,000
New Mexico			85,200			20,300
North Dakota			80,900			22,200
Utah			36,400			20,100
Wyoming			<u>943,000</u>			<u>386,100</u>
Total.....			2,134,800			579,900

Note: Projections for the Alabama Subregion are not compared because separate 1979 projections were not made for that area.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TRANSPORTATION

ASSUMPTIONS

Production estimates used to analyze impacts in this supplemental EIS are based among other factors on current and projected conditions of the transportation network. Because the production levels consider the transportation system, actual impacts to the system should be slight. Other factors, listed below, also have a bearing on projected impacts to transportation networks.

- Railroad capacity can be increased and bottlenecks can thus be eliminated by applying some or all the following methods:
 - double tracking of single-track lines,
 - alternating single and double tracks,
 - increasing the length and frequency of passing sidings,
 - upgrading traffic control systems to automatic block signals or centralized traffic control, and
 - expanding rolling stock.
- The railroad industry would expand line capacity and rolling stock to meet demand as evidenced by its current plans. Impacts on rights-of-way of projected increases in coal traffic could be mitigated by adding to or upgrading existing networks.
- Impacts of roadway traffic directly relate to several factors: speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, operating cost, and traffic volume.
- Truck transportation would generally be limited to short-haul intrastate movements of 50 to 75 miles (Congressional Research Service 1978).
- Most long-haul coal would be carried by railroads.
- Slurry pipelines could increase as a coal transportation mode if major issues such as water availability and right-of-way access over rail lines are resolved. Such pipelines now appear to have little application in the near future. If the slurry industry can overcome these obstacles, the building of slurry lines would tend to reduce the amount of coal carried by railroads and barges.

AFFECTED ENVIRONMENT

Fort Union Region

The major roadway serving the Fort Union Region is Interstate 94, which runs east and west across North Dakota and Montana. The major U.S. Highways in North Dakota are US 85, 52, 83, 2, 12, and in Montana, US 2 and Interstate 94. State secondary, county, Bureau of Indian Affairs, Fort Peck Reservation, and private roads serve as collectors.

TRANSPORTATION

The Burlington Northern and the Soo lines crisscross the region. The Burlington Northern is the major railroad and is an important link in the Nation's railroad system.

Powder River Region

The major roadways serving this region are Interstate 94 and 90 running east and west and Interstate 25 running north and south. The major U.S. highways in Montana are US 59, 212, and 314 and in Wyoming are US 14, 212, 16, 338, 39, 314, 59, and 87. Also serving the region are state secondary, county, Forest Service, Bureau of Indian Affairs, Crow and Northern Cheyenne reservation, and private roads.

The Burlington Northern Railroad operates three main rail lines within the Powder River Region on which most coal is carried east. The new Chicago and Northwestern line has been completed and is moving coal. The Interstate Commerce Commission is considering the Tongue River railroad proposal to build a track from Miles City to Ashland, Montana. This new spur would aid in moving coal from the southeast Montana fields to connect with the Burlington Northern at Miles City. The commission is also evaluating a proposal by the Chicago and Northwestern Railroad to extend its track into Wyoming from Coal Creek Junction north to serve Powder River Basin mines up to the Carter Mining Company's Caballo Mine south of Gillette.

Highway and rail systems are discussed further in previously published documents (BLM 1979c, 1981b; USGS and Montana Department of State Lands 1979).

Green River-Hams Fork Region

The major roadway serving the region is Interstate 80, which runs east and west across Wyoming. The major U.S. highway in the Colorado part of this region is US 40, and the major US highways in the Wyoming part are US 13, 191, 789, 187, 189, and 30. State secondary, county, Forest Service, and private roads also serve the region.

The Denver and Rio Grande Western (D&RGW) Railroad operates in Colorado, and the Union Pacific operates in Wyoming. The D&RGW Railroad in Colorado runs from Craig to Denver and from Bond to Grand Junction. For trains moving east, the major constraint on the line's capacity is the Moffat Tunnel between Bond and Denver. The Union Pacific Railroad is a double-track mainline running east and west across southern Wyoming. Most of the trackage is controlled by centralized traffic control--an advanced signaling system. The rest of the trackage is controlled by an automatic block signaling system. The Union Pacific and D&RGW mainlines have many at-grade crossings within Wyoming and Colorado. Overall traffic for both railroads has declined since 1980 owing to an economic downturn.

Uinta-Southwestern Utah Region

Vehicular traffic within central Utah is carried on four major highways, which form a loop. The north leg is formed by US 6, the east leg by Utah State Highway 10, the south leg by Interstate 70, and the west leg by US 89. In

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addition, some local traffic crosses the Wasatch Plateau on State Highway 29 between Orangeville and Joe's Valley, on the county road between Joe's Valley and Ephraim, on State Highway 31 between Huntington and Fairview, and on the county road between Ferron and Mayfield.

The Utah Department of Transportation reported that traffic is heaviest on the four-lane portion of US 6 north and west of Price. A bypass to the south has been completed and has relieved some traffic congestion in Price, but traffic on State Highway 10 south of Price is reaching a practical maximum for a two-lane highway (BLM 1983h).

Property has been acquired for a proposed D&RGW Castle Valley spur line, to begin at the Wellington coal loadout facilities 1 mile west of Wellington and continue southward 65 miles through Castle Valley to a proposed loop and coal loadout facility 4 miles southeast of Emery. The construction timetable will depend on supply and demand for coal.

Vehicle transportation in south Utah mainly follows US 89, which forms an L along the west and south sides of the coal tracts. As the main route between Flagstaff, Arizona, and the cities of the Wasatch Front in northern Utah, US 89 carries commercial and recreational traffic.

The major roadway serving west central Colorado is Interstate 70, running east and west and connecting Denver to the Uinta-Southwestern Utah Region. The major U.S. highways in Colorado are US 550 and 50. State secondary, county, and Forest Service roads serve as collectors.

The D&RGW Railroad runs east and west across the Uinta-Southwestern Utah Region. For coal trains moving east out of the region the major constraint on the line's capacity is the Moffat Tunnel between Bond and Denver.

The D&RGW spur from Grand Junction is used solely to haul coal. The line ends just past Somerset at the Hawks Nest Mine and connects loadout facilities of several coal mines along the route. The closest rail service to the Cedaredge coal area is Delta, Colorado, 14 miles to the south. Each day, two 100-car trains carry coal from Somerset to Grand Junction and return to Somerset. Coal cars are sided at loadout facilities until they are filled with coal near Delta and Paonia.

San Juan River Region

The major roadway serving the region is Interstate 40 running east and west and Interstate 25 running north and south. The major U.S. highways in New Mexico part of the region are US 555, 666, 57, and 371 and in the Colorado part, US 160 and 666. Also serving the region are state secondary, county, Forest Service, Bureau of Indian Affairs, and Navajo, Zuni, Southern Ute, Ute Mountain, and Pueblo reservation roads.

The San Juan River Region's public roads that serve rural and suburban areas include state highways, county roads, county-maintained roads, and roads maintained by the Bureau of Indian Affairs. New Mexico State Highway 44, US 550, and Interstate 40 form the major transportation network. Coal is hauled by truck to Gallup, New Mexico from the Chimney Rock Mine near Pagosa Springs, Colorado.

TRANSPORTATION

The Atchinson, Topeka & Santa Fe (AT&SF) Railroad runs east-west through Gallup, across the center of the region. An existing AT&SF spur line passes near the Gamerao and Samson Lake coal areas, providing a mode of coal transport. Lee Ranch Mine is served by a private rail spur. Access to this spur by others is a key to coal development in the San Juan Region.

The proposed route of the Star Lake Railroad would run within 2 to 10 miles of all but two of the San Juan River Region's coal areas. Trucks would use newly built coal-hauling roads or rebuilt bladed roads to serve loadout facilities on the Star Lake Railroad, but not in the Colorado part of the region. The potential also exists for the building of rail spurs or conveyor belts to carry coal from proposed competitive lease tracts or preference right leases. As with roads, these spurs would be built to serve loadout facilities.

Alabama Subregion

In 1981, 1,099 miles of navigable waterways, 4,947 miles of railroad, and 25,842 miles of public highway allowed internal movement of Alabama coal (BLM 1983c). Tramways, conveyors, and private railroads were used to a lesser extent, but exact amount of coal hauled by each are unknown. Barge transportation dominates deliveries of coal to the port of Mobile, but rail shipments are increasing.

Alabama's rail system is well developed and serves most of the state. Fayette, Tuscaloosa, and Walker counties are served by four major Class I rail lines. The Norfolk Southern Corporation alone operates seven unit coal trains in Alabama, four of which originate in the three-county area. The remaining three trains travel through Walker County on a route between Pride in Colbert County and powerplants operated by the Georgia Power Company.

Coal from the Alabama Subregion is hauled by barge on the Black Warrior River. At Demopolis the Black Warrior River joins the Tombigbee River, which is navigable to Mobile.

Barge sizes vary, but they are generally either regular 900-ton or jumbo 1,400-ton. The number of barges in tow on the Black Warrior-Tombigbee River system ranges from two to six. Average speed for coal traffic on the Black Warrior and Tombigbee Rivers is 6.67 miles per hour downstream and 4.51 miles per hour upstream.

Water transport through the William B. Oliver Lock and Dam on the Black Warrior River in the western Tuscaloosa metropolitan area is representative of such transport in the southern end of the subregion. In 1980, 10 million tons of coal passed through this lock, which can handle at least 20 million tons per year in the future (Smith 1983).

IMPACTS

General Impacts

Railroads. The environmental impacts on the railroads as on overall system or institution would both depend on and be affected by the physical capacity of the railroad system, including rights-of-way, railroad plants, and railroad equipment (hopper cars and locomotives).

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Potential transportation impacts would be a regional issue because over half of the total U.S. recoverable coal reserves lies within six western states: Colorado, New Mexico, Montana, North Dakota, Utah, and Wyoming.

Because of the apparent willingness of the railroad industry to expand line capacity as evidenced by current plans, impacts on right-of-way of projected increases in coal traffic would be relatively small or could be mitigated through additions to or upgrading of existing networks.

Nonmeasurable impacts of increased coal transportation by rail might be more severe as coal trains move through rural areas and communities along right-of-way. Recently, projected increases in coal movements, particularly in the West, have caused growing public concern.

Impacts of railroads on highway traffic relate to both the length and the number of unit trains. For example, 40 unit trains (100 cars per train) coming and going (a total of 80 trains) at an average of 20 miles per hour would cause a 4.6-hour aggregate delay at crossings over a 24-hour period.

Shorter delays would occur in undeveloped areas where train speeds can increase. Although the passage of single trains might not create significant problems, repeated passages would. Trains blocking crossings would cause queuing of vehicular traffic, adding to the transit time needed to cross communities built along railroads. Blocked crossings would also increasingly hinder the movement of emergency fire, police, and health vehicles. Such blockage has been a problem in Denver and in other eastern slope towns in Colorado and in other states.

Rail-highway crossing impacts would be highly site-specific, depending on the location of the rail line, the volume of rail and vehicular traffic, and the type of rail crossing. Federal Railroad Administration standards for rail-crossing protection devices are largely based on rail and vehicular traffic volumes. In smaller communities, local traffic volumes could be too low to require separate crossings or, in many instances, even flashing warning lights or crossing gates. In addition, small communities that developed around main rail lines are often cut into segments by the lines. Even nominal increases in rail traffic through these communities could impede the free flow of commerce and personal traffic. Communities wanting more safety devices are usually required to finance these improvements. Such funding could be obtained from coal revenues received by the states, from local and state tax revenues through cooperative cost sharing with or reimbursement by the railway company, or from matching fund programs with the state highway department.

New rail extensions, however, offer greater flexibility for planning for separated crossings. For example, the Interstate Commerce Commission certificate authorizing the building of the rail line connecting Gillette and Douglas, Wyoming, required adequate access and ease of movement for local residents. As a result, more separated (not at grade) crossings are being built.

TRANSPORTATION

Highways. Fourteen percent of the Nation's coal production moves from the mine by truck (DOE/EIA 1984b). The effects of such movements by truck is of concern because coal trucks travel on local and secondary road systems that usually cannot withstand repeated use by heavy trucks, even where the gross vehicular weights are within posted limits.

Perhaps one of the most important impacts could be the perceived rather than the actual impact of the truck traffic on a local community: residents would be aware of more traffic volume, noise and vibration, coal spillage and dust, and visual impacts. These impacts would be a consideration in determining the need for highway improvement. Specific impacts and their locations cannot be determined at the programmatic level. The regional EISs would specifically assess these types of impacts.

Increased project traffic would increase accidents, especially at junctions. Traffic accidents would increase directly in proportion to increased traffic volume and the deterioration in the road conditions resulting from increased use.

Fort Union Region

Coal mining at the high production level under No New Federal Leasing and at the low, medium, and high production levels under the Proposed Action and other alternatives would similarly affect transportation in the Fort Union Region. Under all alternatives and at all production levels, the Burlington Northern Railroad could increase its coal train traffic without exceeding the track capacity to the year 2000. No significant impacts would result. The hauling of coal by truck is limited to short distances within and from coal areas, and impacts to highway transportation would be insignificant and limited to the coal areas. Specific roads crossing the coal areas might need to be relocated, but such relocation would involve little disturbance and would not significantly impair roadways or impede traffic flow.

Powder River Region

Coal mining at all production levels under the Proposed Action and alternatives would have similar impacts in the Powder River Region. Impacts at the medium and low production levels of No New Federal Leasing would be least severe, and transportation-related impacts at the high production levels of the Proposed Action and Preference Right and Emergency Leasing would be more severe because of possible increased production.

Railroads. Increased mainline traffic would disrupt automobile traffic at grade crossings for longer periods. On the basis of an assumed line capacity rate of 25 trains per day from single-track lines and 75 trains per day for double-track lines, however, increased traffic would not exceed the capacity of the mainline system and would not significantly disturb the two railroad systems. No significant impacts would be associated with railroads in the Powder River Region because they have already been upgraded to meet projected coal production.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Nonmeasurable impacts of increased coal transportation by rail would be more severe. These impacts relate to the movement of coal trains through rural areas and communities. Increased train traffic (1995 to 2000) would significantly affect five population centers: Miles City, Montana, and Gillette, Newcastle, Torrington, and Lusk, Wyoming. The proposed Tongue River Railroad connection at Miles City could cause more minor congestion and delays at railroad crossings. For example, the coming and going of only 50 (100-car) unit trains at 20 miles per hour at a grade road crossing could cause a 5 hour and 15 minute aggregate delay, a significant impact to the flow of highway traffic at grade crossings. The least time needed for a train moving at 20 miles per hour to pass through an intersection would be 3.5 minutes. The delay for any one vehicle would depend on the level of congestion caused by the backup of traffic.

Highways. Traffic would increase along major routes serving the mine areas because of increased employment and population. The major routes affected in Wyoming would be Wyoming State Highway 59, south and north of Gillette, US 14-16 north of Gillette, and State Highway 338 north of Sheridan. Highways affected in Montana would be Interstate 94 west of Miles City to Forsyth, State Highway 39 south of Interstate 94, US 212 from Interstate 90 to Broadus, State Highway 314 from Decker to the Wyoming border, Interstate 90 from Billings to Sheridan, Wyoming, and State Highway 314 from Decker to Busby.

Most of the major highway systems could handle increased traffic. US 14-16 and Wyoming State Highway 59 north of Gillette lack the structural design and alignment to carry large volumes of traffic (Hanlin 1983). In Montana, reconstruction and repairs already planned should keep highways in good condition (Braut 1983).

Green River-Hams Fork Region

Coal mining at all production levels under the Proposed Action and alternatives would similarly affect transportation in the Green River-Hams Fork Region. But the following production levels would have less severe impacts than the others: medium and low production levels for No New Federal Leasing (for railroads and highways) and the low production levels for the Proposed Action and the Preference Right and Emergency Leasing (for highways only).

Railroads. The Denver and Rio Grande Western (D&RGW) and the Union Pacific railroads have stated that increased rail traffic should not exceed track capacity, at least in the near future. As rail traffic increases in the future, capital would be invested, and maintenance performed to meet demand. Exposure factors and time delays at grade crossings would increase proportionately to rail traffic increases.

The major restriction on the D&RGW track capacity for trains moving east is the Moffat Tunnel (between Bond and Denver), which has a maximum capacity of 48 trains per day. This analysis assumed that most Colorado coal shipped by rail would travel east and that track capacity through the Moffat Tunnel would not be reached by the year 2000. Moreover, some coal trains might travel west from the mines, avoiding the Moffat Tunnel and ensuring adequate track capacity.

TRANSPORTATION

Highways. Much of the project-related highway system within the Green River-Hams Fork Region would not be significantly affected. Most of the other project-related road segments in Wyoming and Colorado would be at less than 50 percent of capacity during peak traffic hours, but US 40 is projected to reach or exceed capacity by 2000. Traffic can be expected to increase on most roads within the region.

Several segments of Wyoming State Highways 13 and 789 and US 191 in Wyoming would undergo minor congestion or periodic slowdowns during peak traffic hours as capacity is approached by the year 2000. Such congestion could cause significant impacts. All other Wyoming highways would have enough excess capacity to meet the needs of predicted increase in traffic volume. Internal traffic in Craig, Rawlins, and Rock Springs would significantly increase, causing much congestion in these communities.

Average daily traffic would greatly increase on county roads, including Moffat County roads 17, 30, 33, and 47 and Routt County roads 27, 53, 59, and 61. Large increases in average daily traffic would also affect several Wyoming county roads, including Seminoe Road and 20-Mile Road in Carbon County and Sweetwater County roads 4-15, 4-18, and 4-76. Analysis of traffic on these roads is beyond the scope of this supplemental EIS but should be included in regional coal EISs.

Uinta-Southwestern Utah Region

Although all production levels under the Proposed Action and alternatives would similarly affect transportation in the Uinta-Southwestern Utah Region, the medium and low production levels of No New Federal Leasing would have less severe impacts than most production levels under the other alternatives. Impacts under the medium and high production levels for the Proposed Action would occur only in 1990.

Railroads. On the basis of an assumed link capacity rate of 25 trains per day for single-track lines and 70 trains per day for double-track lines, hauling of coal under No New Federal Leasing would not exceed the system capacity of the Union Pacific and the D&RGW mainlines. The two railroad systems would not be significantly affected by this alternative.

Nonmeasurable impacts of increased coal transportation by rail would perhaps be more severe. These impacts relate to traffic congestion within urban areas along the rights-of-way. A potential exists for traffic congestion in downtown Price, Utah, both from volume of traffic and from interruptions to traffic on Utah State Highway 10, less than a block south of its intersection with US 6, where the D&RGW crosses it at grade. If only half the coal mined and projected to be mined in the area passes across this intersection and one 100-car coal train (10,000 tons) 1.6 miles long requires 5 minutes to pass, the crossing could be blocked on the average of six times per day, backing traffic into the US 6-State Highway intersection. Although the analysis was made for projected production for the year 2000, some traffic congestion would occur almost immediately.

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Highways. Secondary roads in central Utah are generally adequate to meet the needs of expected traffic. Proposed secondary roads projected to carry current mining traffic are also projected to be upgraded with mining development. As production increases to the year 2000, overcrowding will occur on State Highway 10 south from Price to Castle Dale and on US 6 across Soldier Summit from Castle Gate to Spanish Fork. This overcrowded condition would significantly interfere with traffic movement.

In southern Utah, traffic would increase on the main highways and negligibly increase on secondary roads. Despite the variety and increase in traffic, the highways in southern Utah would accommodate the projected traffic, and increased traffic would not significantly affect the main roadway system. Although existing secondary roads can accommodate only light traffic at best, traffic on these roads is projected to be light to negligible in the absence of federal leasing.

In western Colorado, daily traffic would increase, but this increase is expected to be slight on all state and county roads and would not significantly disrupt the west Colorado road system.

San Juan River Region

All alternatives and production levels would similarly affect transportation in the San Juan River Region. The medium and low production levels of No New Federal Leasing, however, would have less severe effects than the high production level and the other production levels under other alternatives.

Railroads. Because of its location, the Atchinson, Topeka & Santa Fe could carry a high volume of the region's coal. The Proposed Action and the alternatives could significantly affect the railroad system by adding more unit trains and congestion moving coal trains through towns. More specific impacts will be covered in regional and site-specific coal EISs.

Although the Star Lake Railroad system has not been built to the Lee Ranch Mine, a Certificate of Public Convenience and Necessity authorizing construction and operation of this railroad was approved by the Interstate Commerce Commission on December 7, 1984. This new railroad will avoid impacts by providing greater flexibility for separate crossings, adequate access, and ease of movement for local residents. The newly built line would cause fewer time delays for highway traffic than established lines.

Highways. The largest increase in average daily traffic would occur along two major routes connecting the tri-city area of Farmington, Aztec, and Bloomfield. One route includes segments of New Mexico State Highways 44 and 57, and the other route is State Highway 371. This increased traffic would cause significant traffic congestion.

Alabama Subregion

The Proposed Action and No New Federal Leasing would similarly affect transportation in the Alabama Subregion. The medium and low production levels of the No New Federal Leasing Alternative, however, would have less severe

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impacts than the other production levels under other alternatives. Emergency leasing but not preference right leasing would apply to this subregion because the subregion has no outstanding PRLAs.

Railroads. The subregion's rail system is well developed, and its capacities far exceed its present use. The railroad system would not be significantly affected by any alternative.

Highways. Roads in the subregion could handle all the needs generated by projected coal production and should not greatly increase in congestion as a result of traffic increases. No significant impacts would result.

A few unpaved county roads might be relocated but only for short segments. Traffic flow would not be significantly affected.

Waterways. Capabilities of existing barge facilities exceed any potential increase in coal transport. The Corps of Engineers has determined that nonstructural changes at the William B. Oliver Lock and Dam would increase capacity to more than 20 million tons. Barge transportation would thus not be significantly affected.

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The subject of health and safety does not lend itself to an analysis-by-alternative discussion. Rather, the impact discussion applies to all alternatives and regions.

AFFECTED ENVIRONMENT

Mining is and will continue to be a high-risk occupation in which overall fatalities occur five times more often than in manufacturing and disabling accidents occur three times more often than in manufacturing. On a per-ton basis, surface mining is about nine times safer than subsurface mining (OTA 1979). (See Appendix 4, Health and Safety Methodology.) The percentage of surface and subsurface coal production in the federal coal regions is as follows.

	Surface %	Subsurface %
Fort Union	100	0
Powder River	100	0
Green River-Hams Fork	70	30
Uinta-Southwestern Utah	1	99
San Juan River	100	*
Alabama Subregion	37	63

*Less than 1 percent.

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Health Hazards

Some health risks of mining are common to subsurface and surface mining but are magnified for subsurface mining. In the subsurface mine, the dangers of dust, fumes, noise, and other contaminants are intensified by close quarters and artificial ventilation. To a lesser degree, surface miners also face health hazards. The outdoor worker is exposed to dust, heat and cold, diesel fumes, whole-body vibration, noise, and stress. Because the subsurface environment is so clearly more hazardous, comparatively little research has focused on surface miners. Therefore, the following discussions are directed mainly at subsurface mining and to a lesser extent at surface mining.

Mortality. The recognition and prevention of disease are hampered by the time required for many occupationally linked diseases to appear. One mortality study surveyed more than 23,000 United Mine Workers of America miners, of whom 7,628 had died between 1959 and 1971 (Rockette 1977). Rockette found coal miners died more often than the United States male population from respiratory disease (pneumoconiosis, influenza, emphysema, asthma, and tuberculosis), accidents, hypertension, and stomach and lung cancer.

Coal Dust. All mine dust, of which coal dust is most prominent, is classed as either respirable or nonrespirable. Only particles smaller than 5 micrograms are respirable (OTA 1979). When these small particles are retained in the gas-exchanging sacs of the lungs, they cause pneumoconiosis. Coal workers' pneumoconiosis is defined as a chronic dust disease of the lung arising out of employment in an underground coal mine.

Health effects of particulates range from short-term irritation to the inducing of chronic disease such as fibrosis and lung cancer. Irritations lead to bronchoconstrictions and reduced airway size. Repeated irritation results in bronchitis and occasionally asthma. Pulmonary fibrosis results from exposure to coal dust, which causes the lungs to become stiff and resistant to the diffusion of oxygen and carbon dioxide. Although larger particles are not retained in the lungs, continuous exposure to them during the normal work year produces a more or less constant irritation of the upper respiratory tract.

Other Mine Dusts. Coal mine dusts contain a wide range of noncoal particles, including silica and hazardous substances such as benzenes, phenols, and naphthalenes. Trace and other elements such as arsenic, beryllium, cadmium, fluorine, lead, mercury, and selenium also occur in coal and all appear on the Environmental Protection Agency's list of hazardous elements. Little research has been conducted on the health effects of trace element dust or trace element compounds generated in coal extraction. Trace elements may have a role in producing black lung disability, either alone or synergistically. They may also play a role in the excess lung and stomach cancer found in miners.

Harmful Fumes and Gases. Hazardous fumes and gases are often produced in underground mines under both normal and abnormal conditions. Common gases include nitrogen and its oxides, carbon dioxide, methane and other hydrocarbons, sulfur dioxide, and hydrogen sulfide. If ventilation is

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maintained at required levels, these gases are diluted and carried quickly away from the working area. Miners are sometimes accidentally exposed to noxious or poisonous fumes from fires in machinery, conveyor belts, oils, and synthetic materials. No studies have assessed the health impacts of these substances on miners.

Noise. Noise is a proven hazard to both underground and surface miners. Occupational noise has the following possible effects: temporary or permanent loss in hearing sensitivity, physical and psychological disorders, interference with speech communications or the conception of other wanted sounds, and disruption of job performance. Without reliable noise data, it is impossible to predict the extent of hearing impairment miners would experience in the future.

Noise control requires careful equipment engineering and work design. Exposure can be reduced by providing personal protective headgear, but this approach is usually less reliable than engineering control and may increase accidents.

Diesel Equipment in Coal Mines. Health hazards to both surface and underground coal miners from diesel emissions have not been studied definitively. Diesel engines, however, produce emissions that are known to be health hazards: carbon monoxide, unburned hydrocarbons, oxides of nitrogen, particulates, polynuclear aromatic hydrocarbons, phenols, aldehydes, oxides of sulfur, trace metals, nitrogen compounds, smoke, and light hydrocarbons. Exhaust scrubbers, proper maintenance, and ventilation can reduce these emissions.

Safety Hazards

During mining, accidents result from rock and roof falls, explosions and fires, bumps and falls, electrocution, and incidents involving heavy mining equipment and vehicular traffic. In 1982, accident rates per million tons of coal produced in underground mines amounted to 0.319, whereas the rate for surface mines amounted to 0.043. Fatality rates per million tons of coal mined in 1982 amounted to 0.003 for underground mines and 0.0004 for surface mines (U.S. Department of Labor, Mine Safety and Health Administration 1984). (See Appendix 4, Health and Safety Methodology, for the methodology for calculating these rates and the actual calculations.)

IMPACTS

Health

Workers would be exposed to several occupational health and safety hazards during the construction and operation of any coal mine or related facility.

Dust. Early 1970 studies found coal workers' pneumoconiosis (CWP) to occur in 10 to 15 percent of underground coal miners. With the enforcement of existing federal dust standards, such prevalence rates are projected to be 5 percent for underground mines and 2 percent for surface mines for the year 2000 (OTA 1979). Along with CWP, coal miners would continue to experience

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other black lung diseases. For every case of coal workers' pneumoconiosis about three cases of bronchitis, one case of dyspnea (severe shortness of breath), and two cases of airway obstruction occur. These cases are not exclusive and are often found in combination.

Truck and Rail Traffic. Truck and rail traffic create noise and have local health-related air quality impacts. As haul traffic increases, so does noise from more trains and trucks. Although noise can cause temporary or permanent loss of hearing, the greatest impact would probably be the health effects from stress. Harmful fumes and gases from trucks and trains could also have a local impact on the public by diminishing air quality and thereby increasing respiratory irritants.

Safety

Table 4-8 projects accidents and fatalities by coal region and alternative. Accidents and fatalities involving rail and truck traffic would be directly proportional to the number of ton-miles of coal hauled. Therefore, one can assume that as coal production increases, as predicted for later years, so would accidents and deaths. The same relationship would exist for personal traffic accidents: as population in coal areas increases, so would traffic accidents and deaths.

General Public Health and Safety

Mining-related hazards might also affect the public because of either faulty design or unforeseen development. Some of the more obvious possibilities are as follows:

- the presence of acid mine water pools,
- floods caused by sediment pond failure,
- slope failures on reconstructed surface mines, which threaten local housing,
- possible pollution of surface and ground water used for drinking,
- surface subsidence from mining, and
- general long-term health problems caused by the lowering of a region's overall air quality.

Control and Mitigation Methods

Some of the health and safety hazards can be reduced by up-to-date pollution control technology. Others require industrial hygiene controls. The three major control methods are (1) worker training programs, including an intensive training program for new workers and refresher courses for workers throughout their careers, (2) the design and maintenance of safe working environments, and (3) health monitoring programs, including examinations and recordkeeping.

Mortality from the effects of diesel equipment in coal mines and from disease, mine dust, harmful fumes and gases, and noise cannot be measured because little specific data exists. One can reasonably assume, however, that mine conditions would not worsen and should improve with new technology.

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TABLE 4-8
PROJECTED AVERAGE ANNUAL ACCIDENTS AND FATALITIES
FROM MINING, REFINING, AND PROCESSING
(Numbers in parenthesis represent fatalities; other numbers represent accidents.)

REGION	1990			1995			2000		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
No New Federal Leasing									
Fort Union	113(1.0)	136(1.2)	136(1.2)	124(1.1)	130(1.1)	130(1.1)	136(1.2)	142(1.2)	148(1.3)
Powder River	1061(9.3)	1120(9.8)	1180(10.3)	1316(11.5)	1399(12.2)	1606(14.0)	1411(12.3)	1594(13.9)	1932(16.9)
Green River- Hams Fork									
Surface	219(1.9)	219(1.9)	219(1.9)	190(1.7)	190(1.7)	196(1.7)	178(1.6)	178(1.6)	190(1.7)
Subsurface	134(1.2)	168(1.6)	168(1.6)	134(1.2)	168(1.6)	235(2.2)	168(1.6)	168(1.6)	704(6.5)
Total.....	353(3.1)	387(3.5)	387(3.5)	324(2.9)	358(3.3)	431(3.9)	346(3.2)	346(3.2)	894(8.2)
Uinta-SW Utah	905(8.4)	939(8.7)	972(9.0)	1006(9.4)	1039(9.7)	1140(10.6)	1140(10.6)	1140(10.6)	1207(11.2)
San Juan River	130(1.1)	130(1.1)	136(1.2)	154(1.3)	172(1.5)	184(1.6)	202(1.8)	202(1.8)	219(1.9)
Alabama									
Surface	142(1.2)	142(1.2)	142(1.2)	166(1.4)	166(1.4)	166(1.4)	172(1.5)	178(1.6)	190(1.7)
Subsurface	469(4.4)	469(4.4)	469(4.4)	536(5.0)	536(5.0)	536(5.0)	570(5.3)	570(5.3)	671(6.2)
Total.....	611(5.6)	611(5.6)	611(5.6)	702(6.4)	702(6.4)	702(6.4)	742(6.8)	748(6.9)	861(7.9)
Preference Right and Emergency Leasing*									
Fort Union	--	--	--	--	--	--	--	--	--
Powder River	--	--	--	1286(11.2)	1363(11.9)	1565(13.6)	--	1571(13.7)	--
Green River- Hams Fork									
Surface	219(1.9)	225(2.0)	225(2.0)	--	--	231(2.0)	--	184(1.6)	255(2.2)
Subsurface	101(0.9)	134(1.2)	134(1.2)	--	--	201(1.9)	--	201(1.9)	469(4.4)
Total	320(2.8)	359(3.2)	359(3.2)	--	--	432(3.9)	--	385(3.5)	724(6.6)
Uinta-SW Utah	--	1006(9.4)	1006(9.4)	1241(11.5)	1341(12.5)	1341(12.5)	1241(11.5)	1274(11.8)	1274(11.8)
San Juan River	--	--	130(1.1)	142(1.2)	160(1.4)	--	--	--	--
Alabama	--	--	--	--	--	--	--	--	--
Proposed Action*									
Fort Union	--	--	--	--	--	--	--	--	--
Powder River	--	--	--	1268(11.1)	1346(11.7)	1517(13.2)	1381(12.0)	1541(13.4)	1885(16.4)
Green River- Hams Fork									
Surface	219(1.9)	219(1.9)	225(2.0)	--	--	225(2.0)	172(1.5)	172(1.5)	249(2.2)
Subsurface	101(0.9)	134(1.2)	134(1.2)	--	--	134(1.2)	134(1.2)	134(1.2)	168(1.6)
Total	320(2.8)	353(3.1)	359(3.2)	--	--	359(3.2)	306(2.7)	306(2.7)	417(3.8)
Uinta-SW Utah	--	1006(9.4)	1006(9.4)	1308(12.2)	1408(13.1)	1676(15.6)	1509(14.0)	1643(15.3)	2012(18.7)
San Juan River	--	--	130(1.1)	142(1.2)	160(1.4)	172(1.5)	178(1.6)	178(1.6)	202(1.8)
Alabama	--	--	--	--	--	--	--	--	--
Total.....	4356(30.2)								

*Includes only regions in which number of accidents would exceed those under No New Federal Leasing.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

NATIVE AMERICAN ISSUES

This section discusses key concerns and issues raised by Native American groups and tribes. Concerns relating directly to environmental effects will be examined in detail in the regional or site-specific coal EISs. The impacts examined elsewhere in Chapter 4 would affect Indian tribes and their land, but such site-specific impacts are not discussed at the programmatic level of analysis.

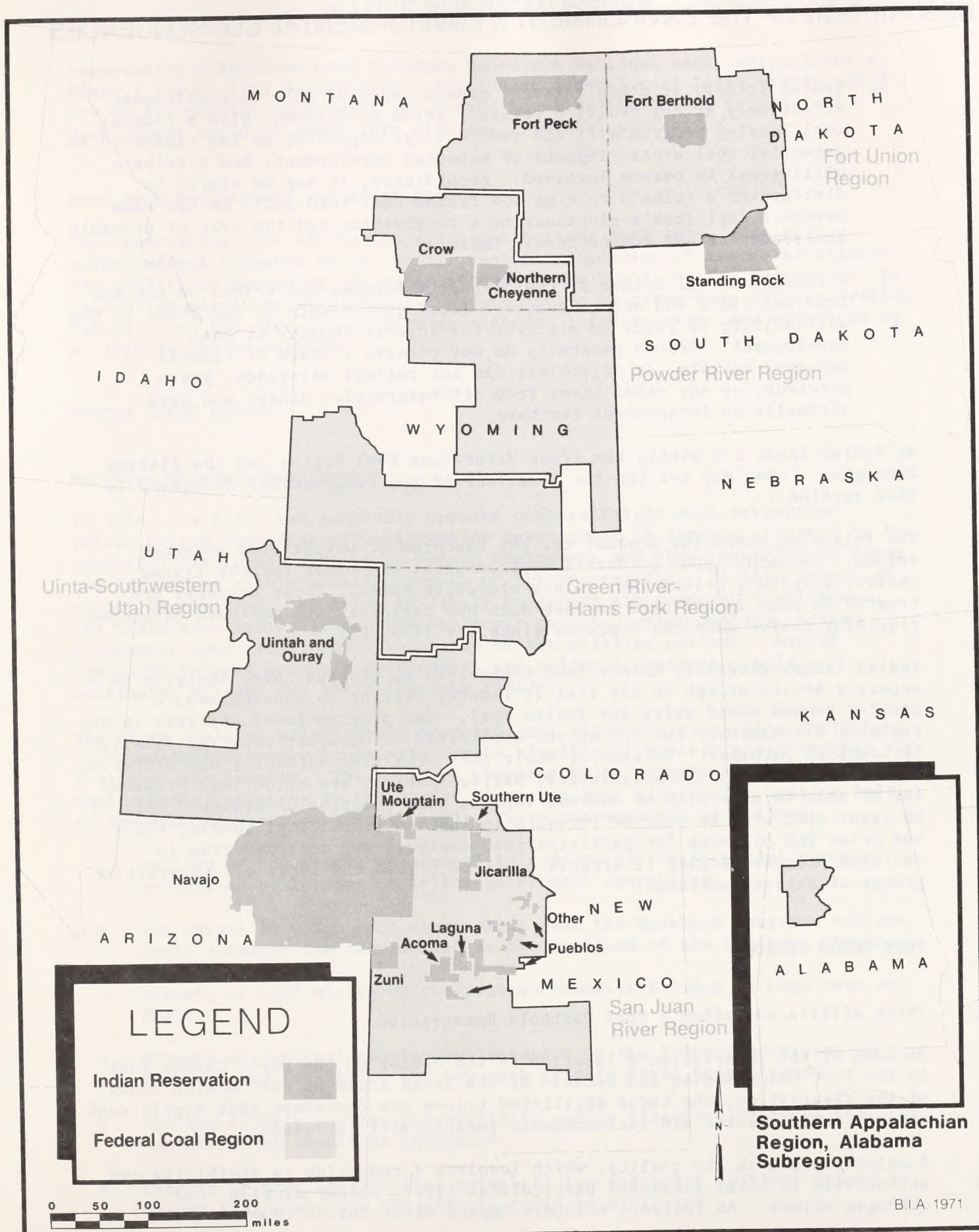
Tribal demands for increased environmental protection have been a dominant theme in recent tribal-federal relations concerning energy development around Indian reservations. The Northern Cheyenne and the Fort Peck (Assiniboine and Sioux) tribes petitioned the Environmental Protection Agency to reclassify their reservations to Class I areas under the Clean Air Act, and the Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation have been granted a Class I Air Quality redesignation status. These are the only instances in the country in which communities have voluntarily requested that this stringent standard be applied. Even tribes that have done little to undertake regulatory responsibilities or that have little industry to regulate have acted to preserve wildlife, unspoiled areas, and sites of historic or cultural importance. Indian tribes have a strong interest in maintaining high environmental standards (Council of Energy Resource Tribes 1979).

Indian tribes in the West own an estimated 70 billion tons of coal reserves, 30 billion of which are surface minable. These reserves make up the largest block of nonfederal coal and are an important potential source of supply for future western coal production. The most important Indian coal owners are the Crow and Northern Cheyenne Tribes in the Powder River Region in Montana, the Navajo Tribe in the San Juan River Region, and the three affiliated tribes in the Fort Union Region (Map 4-1). All of these tribes except the Northern Cheyenne and the off-reservation Indians in New Mexico have consistently stated an interest in developing their coal reserves. Coal development has the potential for generating a major infusion of income for the tribes, which is a goal of the Indian self-determination policy.

A total of 22.9 million tons of coal were mined on Indian lands in 1979, 13.8 percent of total western production. In 1977, the largest amount of Indian coal--11.5 million tons--was mined in Arizona. In the same year, Indian coal production was 11.4 million tons in the six western federal coal states, 6.9 million tons in New Mexico, and 4.5 million tons in Montana (BLM 1979a).

Environmental concerns of Indian tribes vary because of political, cultural, and geographical differences. Comments submitted on regional coal EISs and the U.S. Congress Office of Technology Assessment report (OTA 1984) reveal three concerns common to the Indian tribes within the coal regions.

1. Tribes feel that consultation has been inconsistent and inadequate during land use planning and has tended more toward "mollification" than toward "consultation" during activity planning. Similarly, the tribes do not believe they have been given adequate information to support effective participation in decisions or recommendations on leasing levels or lease sales.



MAP 4-1 INDIAN RESERVATIONS OF THE FEDERAL COAL REGIONS

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

2. Indian tribes, as other interest groups, must be able to participate effectively at key decision points. Tribe involvement with a federal coal leasing program will and should vary, depending on the closeness to potential coal areas, impacts of expected development, and a tribe's willingness to become involved. Accordingly, it may be useful to distinguish a tribe's role on the region coal team (RCT) on the same bases--a coal area's closeness to a reservation and the size of probable environmental and socioeconomic impacts.
3. A concern of all tribes is the disparity between the tribes on the one hand and state and off-reservation local governments on the other is the availability of funds to mitigate the adverse impacts of coal development. Tribes generally do not receive a share of federal bonuses, rentals, or royalties; can not collect severance, gross proceeds, or any other taxes from off-reservation mines; and have virtually no independent tax base.

No Indian lands lie within the Green River-Hams Fork Region and the Alabama Subregion. (See Map 4-1 for the locations of the reservations discussed in this section.)

The following summaries present the key concerns of potentially affected tribes. Concerns about potential environmental and other impacts listed reflect a tribe's priorities, unless otherwise noted. These concerns are treated in some detail here because much new regional data has been developed regarding Native American concerns since the 1979 FES.

Indian issues generally do not lend themselves to program-level analysis as a separate entity except to say that if federal leasing is constrained, a greater demand would exist for Indian coal. For program-level analysis in the regional discussions, the tribes are recognized as distinct entities (similar to counties perhaps). Because of their lack of taxing authority and differing social and cultural characteristics, Native American are often less prepared for or able to cope with or address impacts than counties or states. This is an issue that will be carried forward in the individual coal leasing EIS's and prior BLM planning for participation, analysis and consideration in decision process because it affects specific tribes and local off-reservation groups of Native Americans.

FORT UNION REGION

Three Affiliated Tribes - Fort Berthold Reservation

Because of the reservation's location in the center of the North Dakota part of the Fort Union Region and because of the large scale of coal mining south of the reservation, the three affiliated tribes are concerned that significant adverse environmental and socioeconomic impacts will increase.

A major concern is air quality, which involves a reduction in visibility and an increase in total suspended particulates (TSP), sulfur dioxide, and nitrogen oxides. An indirect economic impact might result from the

NATIVE AMERICAN ISSUES

reservation's location near Theodore Roosevelt National Park, which holds a Class I air quality designation. Developing federal coal lease tracts could use up air quality increments and reduce the likelihood that tribal coal development could be compatible with environmental protection.

Fort Peck Assiniboine and Sioux Tribes

The reservation lies within the northeast Montana coal area. The tribes' environmental concerns relate to (1) possible degrading of the reservations' air quality or exceeding the reservations' Class I air quality increments; (2) disrupting migratory wildlife on the reservation by disturbing off-reservation habitat; and (3) disrupting the reservations' infrastructure and resources by a large influx of workers.

POWDER RIVER REGION

Northern Cheyenne Reservation

To date, the tribe has generally opposed on-reservation coal extraction. Tribal policy regarding off-reservation development is largely attached to the potential for tribal members to obtain employment and other benefits at mines and facilities within a daily commute of the reservation. If this potential cannot be realized, the tribe is likely to oppose the proposed development. The tribe also expressed concern about air quality, water quality, tribal government operations, and maintenance of the existing culture. Making tradeoffs between economic development and cultural preservation is a continuing dilemma for the tribe (BLM 1984d).

The large scale of existing and proposed coal mines and conversion facilities surrounding the reservation could create significant adverse environmental and socioeconomic impacts. The Northern Cheyenne Tribe submitted its environmental concerns to the Powder River Regional EIS scoping meeting held at Ashland, Montana, on May 26, 1983. These concerns are as follows.

1. Ability of the tribal government to respond to the potential changes brought on by leasing on tribal government operations.
2. The extent to which coal development near the Northern Cheyenne culture could endanger the reservation as the homeland of the Northern Cheyenne.
3. Effects of coal mining on reservation communities such as Lame Deer and Busby.
4. Effects of regional population increases on the tribe's provision of services and facilities and how such effects could be mitigated.
5. How the tribe's and the reservation's public financing (revenue and expenditures) should be addressed.
6. Effects on traffic and other potential law and order problems caused by nearby mining and how the effects could be mitigated.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

7. The employment of tribal members as a mitigation measure.
8. The use of stipulations to mitigate adverse effects on the tribe.
9. Concern about the lack of site-specific analysis for specific leases.
10. The tribe's feeling that developing maintenance tracts would result in increased production and new impacts.
11. Concern that development would disrupt, destroy, or expose many sacred sites to the public.

Crow Reservation

Both the northeast and southeast boundaries of the Crow Reservation lie near federal coal areas (Colstrip, Spring Creek, and North/West Decker) and existing coal mines and conversion facilities. In addition, an active coal mine lies in a ceded area at the reservation's northeast border, and another mine in the southeast portion of the reservation, Youngs Creek, is slated to begin operation as soon as a coal sales contract is obtained. The Crow are open to coal development but have the following two major concerns.

1. **Air Quality.** The Crow Tribe is concerned that pollution could harm their reservation, especially at medium and high production levels (large-scale strip mining of coal, related conversion facilities, powerplants, and synthetic fuel operations).
2. **Water Quality and Quantity.** The tribe is concerned that intensive coal development could pollute tributary streams on or next to the reservation.

UINTA-SOUTHWESTERN UTAH REGION

Two tribes are associated with the coal leasing program within this region--the Ute Tribe (Uintah and Ouray Reservation) and the a Paiute Tribe of Utah.

Uintah and Ouray Reservation

The Ute Tribe and its leaders appear to be convinced that economic development on and next to their reservation can be compatible with Ute culture, but only if the tribal government can help formulate mitigation.

Because of the tribe's strong interest in protecting the reservation's air quality, the Ute Tribe has a research facility, the Ute Research Laboratory, which is conducting an air quality monitoring program.

Even though the Ute Tribe is tied to economic development and is looking to coal development as a way to increase reservation employment, the tribe has the following environmental concerns.

NATIVE AMERICAN ISSUES

1. **Traffic Volume.** Concerns include increased traffic movement across the reservation via north-south and east-west roadways, which could increase traffic accidents.
2. **Increased Population.** The tribe is concerned that population increases related to intensive coal development could more intensely stress the already stressed tribal public facilities and services.
3. **Socioeconomics.** The tribe sees itself in a particularly vulnerable economic situation because of the closeness of the reservation's south boundary to one of the region's coal areas. As a result, the tribe is concerned about the possible impacts of development on public services and facilities. Most likely to be heavily affected are the roads, traffic control, law and order, health care, and housing. The Ute Tribe will not be able to share the revenues provided to off-reservation government under Utah Code Annotated Section 63-51-10 (Supp. 1981) (Senate Bill 170) to mitigate such adverse impacts (see Table 1-11).
4. **Air Quality.** The tribe is concerned about fugitive dust from mining and other impacts from conversion facilities and that the reservation's air quality increments in the region are being usurped.
5. **Water Quality.** The tribe is concerned that aquifer interception and contamination from mining could affect the tribal water supply--springs, wells, streams, and rivers.
6. **Wildlife.** The tribe is concerned that off-reservation coal development could affect migration routes of wildlife moving onto the reservation, which could affect tribal food supplies.
7. **Historical and Burial Sites.** The tribe is concerned that intensive coal development could disrupt, destroy, or expose to the public many sacred historic and burial sites.

SAN JUAN RIVER REGION

Navajo Reservation

Most of the western half of the New Mexico part of the San Juan River Region lies within the jurisdiction of the Eastern Navajo Agency, an off-reservation administrative unit of the Bureau of Indian Affairs. The following are some of the tribal concerns in regard to the federal coal leasing program within the land under the jurisdiction of the Eastern Navajo Agency (BLM 1983g). Most of these concerns were also raised by the Navajos at the Albuquerque Hearing on the draft supplemental EIS on March 20, 1985.

1. **Relocation.** A general concern exists about impacts on Navajos from relocation because of coal leasing and mining and the need to define concrete mitigation measures, such as lands to be used for relocation and provisions for compensating relocation costs. Coal leasing could significantly affect the Navajo-Hopi relocation program and the litigation by Navajo allottees regarding surface owner consent and coal ownership.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

2. **Socioeconomics.** Impacts from an influx of people could cause housing shortages, increases in crime and alcoholism, and a deterioration of law and order. All of these changes could in turn adversely affect the Navajo lifestyle. Mining of the areas where Navajos graze their livestock could disrupt their traditional means of livelihood. At the Albuquerque hearing, the Navajos expressed their desire to continue to live on the land where their ancestors lived and to be left alone. Coal mining employment opportunities for Navajos has been limited, and employment of Navajos at some mines has been restricted to one person per family.
3. **Reclamation and Revegetation.** Coal development could reduce the amount of grazing land, and the reclamation program might not be adequate to return the lost grazing land in a short period. The Navajos are also concerned about a lack of water to ensure reestablishment of vegetation needed for reclamation.
4. **Water Quality and Quantity.** Tribal concerns center on the availability of water needed for the proposed mining and related conversion facilities in coal areas (in view of the current scarcity for existing domestic, irrigation, and livestock demands) and the possibility of a new town in the region. Other tribal water quality concerns include ground water interception and the recharge levels of aquifers supplying water to many tribal lands. Finally, the tribe is concerned that water quality may be impaired by increased nearby coal mining.
5. **Cultural, Archaeological, and Paleontological Resources.** The Navajo Nation strongly believes that comprehensive inventories of these resources must be undertaken before decisions are made to implement a leasing plan. Otherwise, Navajo graves and sacred sites and the rich diversity of significant archaeological and paleontological resources in the region could be irretrievably lost, not only to the tribe but to society in general.
6. **Air Quality.** The Navajo Nation is concerned about decreases in visibility and increases in total suspended particulates, sulfur dioxide, and nitrogen oxides. An indirect economic impact might result from the reservation's location near the coal areas, the possibility that air quality increments could be used up, and the decreasing likelihood that tribal coal development could be compatible with environmental protection. Recent information on the effects of coal use should be considered, especially acid precipitation.
7. **Noise and Vibration.** Noise and vibration of intensive coal mining could harm people, livestock, and wildlife and could damage fragile archaeological and paleontological resources.
8. **Visual Resources.** The Navajo Tribe's key concerns are the scenic quality of the landscape and possible destruction of some unique geological formations and wilderness areas.
9. **Coal Market** The Navajos feel that more federal leasing in the San Juan Basin would depress the value of tribal coal below a realistic fair market value and would make it increasingly difficult to market Indian coal.

NATIVE AMERICAN ISSUES

10. **Representation and Participation.** Navajos should be afforded the opportunity to participate more fully and be given more understandable information about the coal program. The general consensus of those testifying at the Albuquerque hearing, both Navajo and non-Navajo, was that the Navajo should have a representative with voting rights on the San Juan River Region Regional Coal Team.
11. Although not a concern with the federal coal program, it should be noted that the Navajo Tribe, with three other potential partners, has proposed to build a 2,000-megawatt, four-unit powerplant in the northwest corner of New Mexico on the Navajo Reservation. The plan calls for the tribe to supply land, labor, and coal. (A portion of the coal would come from the 35,000-acre Paragon Resources Ranch in western New Mexico, which the tribe acquired in the trade under the Navajo-Hopi relocation program.) Bechtel Power Corporation would design and build the plant, General Electric Company would supply equipment, and Public Service Company of New Mexico would operate the plant. Although this plant is still in the preliminary discussion stages, a decision on whether to go through with the project is expected in 12 to 18 months. The proposed plant would mean that the Navajo Tribe would be the first American Indian sovereign nation to become a joint owner of a major power project. Under the plan, electric power would be sold on the open market rather than directly to consumers (Albuquerque Journal, March 23, 1985).

Jicarilla Apache Tribe--Jicarilla Apache Reservation

The following are some of the Jicarilla Apache Reservation and tribal concerns (BLM 1983g).

1. **Water Quality and Quantity.** The Jicarilla Tribe is concerned about the availability of water from Navajo Reservoir and the San Juan River and the amount required for the proposed mining and related conversion facilities in coal areas. That surface water would preempt the tribe's rights to Navajo River water because that stream is a tributary to the San Juan River. The tribe is also concerned that ground water pumping could reduce the reservation's ground water supply.
2. **Air Quality.** The Jicarilla Tribe has the following air quality concerns: (1) that chronic exposure of pollutants will lower forest and range land productivity, (2) that health effects of air pollutant exposure may aggravate respiratory disorders, (3) that haze will impair visibility, and (4) that acid precipitation and acid dry deposition may be severe enough to acidify lakes.
3. **Traffic.** Impacts from traffic generated on New Mexico State Highway 44 and other roads across the reservation could increase traffic accidents and maintenance costs.
4. **Endangered Species - Wildlife.** The tribe is concerned about protecting the bald and golden eagles and the peregrine falcon.
5. **Socioeconomic Impacts.** The tribe is concerned about pressure generated through population increases and how the following factors will affect them and their land: unauthorized wood gathering, off-road

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

vehicle use, poaching, disturbance of archeological sites, livestock theft, increase in funds needed to mitigate these effects, and economic change that is driving up prices in Farmington, the tribe's major shopping center.

Northern and Southern Pueblos

The 19 New Mexico pueblos lie in the east and south portion of the region to north and west of Albuquerque. The pueblos are concerned about socioeconomics, reclamation and revegetation, water quality and quantity, cultural resources, air quality, and visual resources.

Other Indian Tribes--Zuni, Ute Mountain, and Southern Ute

These tribes have environmental concerns similar to those of the above tribes.

AIR RESOURCES

AFFECTED ENVIRONMENT

The air resources of the six coal regions consist of a combination of the climate and the air quality in and around those regions. The climate is generally moist and temperate in the Alabama Subregion and arid and semiarid in the Western coal regions. Air quality in the six regions ranges from good to very good.

Fort Union Region

The Fort Union Region has a semiarid continental climate. Winters are long and cold; summers are short and warm. Many fronts pass through the area, but because the region is far from major moisture sources, precipitation is not plentiful. From 12 to 15 times a year, Arctic air breaks into the region, causing severe winter cold. The extreme cold is often moderated in the western and southern parts of the area by chinook winds that develop on the eastern slopes of the Rocky Mountains.

The Rocky Mountains, to the west of the region, modify the prevailing westerly flow of air masses from the northern Pacific. But no topographic barriers modify the flow of cold, dry air masses from the polar regions to the north and the warm, moist air masses from tropical regions to the south. As a result, weather patterns rapidly change.

The Fort Union Region's topography consists of rolling plains with no major elevated features obstructing air dispersion. The region's landforms that have a relatively minor and localized effect on air dispersion are the Killdeer Mountains and the Missouri and Yellowstone river valleys, including Fort Peck Reservoir and Lake Sakakawea. No distinct major air basins occur within this region as a whole (BLM 1982a).

AIR RESOURCES

Mean annual temperatures vary from 38°F in the northeast part of the region to 45°F in the southeast part. The region is subject to the dominant path of Arctic-generated storms crossing the United States-Canada border as well as the chinook winds that moderate the cold temperatures in the western part of the region.

The region is windy; annual average speeds are 10 miles per hour (mph). The prevailing direction is northwest, but southerly winds are common during warm months. The prevailing windy and sunny conditions cause evaporation to exceed normal precipitation by a factor of two or more.

Surface-based inversions occur on 65 percent of winter mornings and 80 percent of summer mornings. Forty to 50 percent of the inversions are accompanied by winds of 5 mph or more. On summer afternoons, surface-based inversions are rare; on winter afternoons, they occur 25 to 30 percent of the time. Morning mixing depths tend to be lowest in summer in the eastern part of the region and lowest in the winter in the western part (BLM 1979a). The region's air quality is generally very good. No part of the Fort Union Region is classified non-attainment for any pollutant (BLM 1982a).

Total suspended particulate (TSP) data for 1979 and 1980 shows that in rural areas of eastern Montana the annual geometric mean concentrations range from 13 to 21 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) at Scobey and 20 to 27 $\mu\text{g}/\text{m}^3$ at Fort Peck and Lindsay. The figures represent up to 28 percent of the Primary National Ambient Air Quality Standard (NAAQS) at Scobey and 35 percent of the Primary NAAQS and 45 percent of the Secondary NAAQS at Fort Peck and Lindsay. The highest 24-hour concentrations observed were 116 $\mu\text{g}/\text{m}^3$ at Scobey, 153 $\mu\text{g}/\text{m}^3$ at Fort Peck, and 208 $\mu\text{g}/\text{m}^3$ at Lindsay. These concentrations represent up to 77, 102, and 139 percent respectively of the Secondary NAAQS (BLM 1982a).

Rural sites in western North Dakota showed annual geometric means of 11 to 28 $\mu\text{g}/\text{m}^3$ TSP, and peak 24-hour TSP concentrations ranging from 90 to 290 $\mu\text{g}/\text{m}^3$. The rural sites reach as high as 47 percent of the more stringent Secondary NAAQS for the annual geometric mean and as high as 193 percent of the 24-hour Secondary NAAQS.

Powder River Region

The climate of the Powder River Region is continental and semiarid. Frontal systems from the Pacific regularly cross the area but drop most of their moisture on the western slopes of the Rocky Mountains. About a dozen times a year, winter storms from the north swing through the area, bringing windy and often intense cold weather with rarely significant moisture. These cold waves are often modified by periods of milder weather created by chinook winds. These winds, warm and dry, often reach velocities of 25-50 mph and may persist for several days. Spring and summer bring some moisture, but the region is considered to be dry.

Average annual temperatures vary little throughout the region, with most points averaging 45°F. Maximum temperatures exceeding 100°F occur in July. The Arctic outbreaks in winter bring extreme cold in January and February, with record lows of -50°F.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

About 75 percent of the average annual precipitation of 14 inches falls from April to September. At least half the average annual precipitation falls during late spring and early summer at the start of the growing season.

Perhaps the region's most important climatic feature is the recurrence of drought cycles. Though this region is semiarid, it varies from humid in some years to arid in others and is never predictable.

The region is windy, with average speeds of 12 mph. The prevailing direction is westerly, but directions near terrain features may greatly vary. Surface-based inversions occur on 75-85 percent of the mornings, summer and winter. On winter afternoons, surface-based inversions occur 35 percent of the time. Stable conditions prevail in spite of generally windy conditions, contributing to high summer afternoon mixing heights. Air quality in the region is generally good but varies around populated areas, especially in areas of current surface coal mining (BLM 1979a).

In the Wyoming part of the region, annual geometric mean TSP values range from 5 to 55 $\mu\text{g}/\text{m}^3$, all within the state annual standard of 60 $\mu\text{g}/\text{m}^3$. A background concentration of 15 $\mu\text{g}/\text{m}^3$ annual geometric mean has been used in most analyses performed for the Powder River Basin and has been used in this analysis. Secondary-maximum 24-hour measured values range from 8 to 330 $\mu\text{g}/\text{m}^3$. Some of the sites exceed the State of Wyoming 24-hour standard of 150 $\mu\text{g}/\text{m}^3$, but most sites comply.

In the Montana part of the region, annual geometric mean TSP values range from 9 to 138 $\mu\text{g}/\text{m}^3$. Some values exceed the state annual standard of 75 $\mu\text{g}/\text{m}^3$, but most of the monitored values were measured within the mine boundaries where the standards do not apply. Secondary-maximum 24-hour monitored concentrations range from 38 to 973 $\mu\text{g}/\text{m}^3$. Again, some values exceed the state standard of 200 $\mu\text{g}/\text{m}^3$, but most of the monitoring locations showing violations are within mine boundaries (PEDCo Environmental Inc.. 1983).

Green River-Hams Fork Region

This region has mostly a semiarid continental climate. Fronts generally originate in the Pacific and drop moisture in the mountains as wind currents pass over increased elevations. The region's complex topography creates much variation in site-specific temperatures, precipitation, and surface winds.

These influences are generally less on the plateaus than in the valleys (BLM 1983b). General flooding potential is low, but flash floods may result from intense summer thunderstorms. Evaporation potential usually exceeds total precipitation.

The average annual temperatures range from 37° to 46°F with variations due mostly to differences in elevation and exposure. Frost-free growing seasons range from 28 days in Steamboat Springs, Colorado, to 106 days in Rawlins, Wyoming (Science Applications, Inc. 1980).

AIR RESOURCES

Prevailing winds for most of the region generally blow from the southwest. Most of the harsh winter storms blow from the northwest. The wind patterns are typically funneled through some of the mountain passes and canyons. The winter winds out of the north typically bring cold dry air with velocities sometimes exceeding 40 mph. During both summer and winter the region commonly has surface-based inversions that tend to be intense but not particularly deep.

Overall regional air quality is very good, being typical of undeveloped regions in the western United States. Ambient pollutant levels are usually near or below measurable limits. Notable exceptions in this region include high, short-term TSP concentrations (related to local winds) and possibly ozone and carbon monoxide, especially in towns. Locations vulnerable to decreasing air quality from extensive energy development include the immediate operation areas (coal mines), local population centers with their induced impacts, and distant areas that can be affected through long-range transport of pollutants (BLM 1983b).

Rural annual geometric mean TSP values range from 23 to 59 $\mu\text{g}/\text{m}^3$, and rural secondary-maximum 24-hour values range from 52 to 205 $\mu\text{g}/\text{m}^3$. Some areas have measured high particulate levels, but because the cause is mainly natural fugitive dust, these areas have been designated unclassified (neither attainment nor non-attainment) (BLM 1983b).

Uinta-Southwestern Utah Region

Prevailing southwest winds that cross the Colorado and Mojave deserts give most of the region an arid climate with a high evapotranspiration rate. Rugged topography and great differences in elevation and orientation, however, cause temperature and moisture to greatly vary within short distances. The result is a mosaic of microclimates with significant differences between north- and south-facing slopes and between sheltered canyon bottoms and exposed ridges. At higher elevations, subzero winter temperatures are common, summers are cold, and growing seasons are short. For several months of the year the higher peaks and mountain ranges are covered with snow, often several feet deep.

The lower elevations have hot summers, with temperatures often exceeding 100°F, especially in southern parts of the region. Even at lower elevations, subfreezing temperatures often occur in the winter. The clear, dry air typical of much of the area is conducive to rapid temperature changes. It is not unusual to have temperatures in the 80s at midday and frost at night within the same 24-hour period.

In spite of the prevailing general movement of air from west to east, many local wind variations result from the rugged topography. Warm air rises from the valley floors and plains during the day, and cold air drains down from the higher elevations at night. The resulting local wind flows can be strong but rarely last long.

Throughout rural parts of this region, air quality is generally very good, and no major particulate concentrations occur. Occasionally, air quality problems occur in the closed valleys where temperature inversions trap and hold urban and industrial emissions (BLM 1979a).

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Annual geometric mean TSP values in the region range from 11 to 94 $\mu\text{g}/\text{m}^3$. Secondary-maximum 24-hour TSP values range from 74 to 346 $\mu\text{g}/\text{m}^3$ (BLM 1983h).

San Juan River Region

This region lies south of the major storm belt from the Pacific across the Rockies. The general climate is semiarid, with variations resulting from elevation and topography. The Pacific fronts that cross the region deposit most of their moisture on the mountains to the west. In the colder season, storms that develop off southern California move through the region once or twice a year and produce some precipitation, mostly on higher terrain as snow. During the summer, widely scattered showers and thunderstorms are spotty and erratic, often leading to drought in many areas.

Annual mean temperatures vary from 48°F to 52°F. Temperatures exceeding 100°F occur throughout the region. Subzero temperatures are uncommon except in the mountains. A distinctive feature of the climate is the large variation in the daily high-low temperatures.

Annual precipitation averages less than 10 inches for most of the region, though points in northern New Mexico and southwest Colorado receive 20 inches or more. At lower elevations, about half the precipitation falls from May to August. At higher elevations, a greater proportion is received from winter storms. Summer rainfall is mostly from intense local thunderstorms, which often cause flash floods. Potential evaporation exceeds normal precipitation by a factor of 6 or more.

Wind direction tends to reflect local topography. Generally, winds are westerly during the day and easterly during the night, but terrain features complicate the wind field and cause significant deviations. For example, uneven cooling of the air results in downslope drainage of cold dense air during calm, clear nights, and the heating of valley walls and hills causes air to flow upslope and out of the valleys on calm, fair days. These terrain-induced circulations are common with the complex topography throughout the region.

Mixing heights and transport winds vary daily and seasonally. Mixing heights are generally higher in the afternoon than in the morning. Morning mixing heights are lowest during winter because of radiation inversions and afternoon mixing. Surface-based inversions occur from 80 to 90 percent of the mornings throughout the year but are uncommon during afternoons. Stagnations are highly prevalent. Ventilation values are highest in the spring because of strong transport winds and lowest during winter because of long nights, short days, snow cover, and persistent high-pressure systems. These various conditions result in a poor potential for pollution dispersion during certain periods.

Nevertheless, the region's air quality is mostly considered good and is better than the national standards. High winds can pick up dust, which can result in high particulate content in local areas for several days at a time (BLM 1979a).

The annual background level of particulates is about 30 $\mu\text{g}/\text{m}^3$, which meets state and federal standards. The region is classified as an attainment area for particulates (BLM 1984c).

AIR RESOURCES

Alabama Subregion

The Alabama Subregion has a moist temperate climate, with a mean annual rainfall ranging from 52 inches along its western side to 56 inches along its eastern side. Rainfall is fairly well distributed throughout the year. Winter is the wettest season and March the wettest month. Thunderstorms occur throughout the year but most often during spring and summer, when July is the wettest month. Fall is the driest season and October the driest month. Rainless periods lasting more than 2 or 3 weeks are rare. During the coldest months, frequent shifts occur between mild, moist Gulf air and cool, dry continental air (BLM 1983d).

Air quality in the subregion is generally good. Fayette, Walker, and Tuscaloosa counties have been designated as attainment/unclassified areas for TSP. TSP levels in the subregion are generally below the maximum levels specified by state and federal regulations. The annual TSP standard, however, was exceeded in 1977 and 1978 in Walker County. Maximum annual TSP concentrations reached 82 ug/m^3 . The annual standard was not exceeded in 1979. The 24-hour secondary standard was exceeded in 1979. The high TSP levels in Walker County are mainly due to fugitive dust from coal trucks driving on unpaved roads (Frentz and Lynnott 1978). Rural background TSP levels over the study area are approximately 40 ug/m^3 (Barrett 1980).

Maximum sulfur dioxide (SO_2) concentrations monitored in and near the subregion were found to be about 30 percent of allowable levels. Background SO_2 concentrations are in the range of $1\text{--}20 \text{ ug/m}^3$ (EPA 1979).

IMPACTS

General Impacts

This section addresses air emissions so as to compare regional emission totals and federal coal management program alternatives against the No New Federal Leasing base totals. A discussion of the sources of particulate air emissions from the exploration, extraction, beneficiation and transportation cycles of coal development follows. Finally, this section discusses total emissions data for each coal region and each alternative.

Aggregated emissions do not directly represent measures of air quality degradation. The quality of the air is measured by the concentration of pollutants in the atmosphere, typically expressed in micrograms per cubic meter (ug/m^3). Models of varying sophistication can be used to calculate, under specified circumstances, point or area source emissions into estimates of ambient air concentrations. The use of these models requires detailed information on the nature of the source and meteorological and geographic characteristics of the surrounding area. When feasible, these models would be a primary analytical approach to use in regional coal EISs.

The alternatives for a federal coal management program cannot be compared by ambient concentrations because data is not specific enough for the model calculations. These calculations also present a detailed analysis of impacts

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on Class I scenic and other sensitive areas. These impacts are more appropriately assessed at the regional level of analysis. A comparison of the total emissions for each alternative is the most worthwhile measure of relative air quality impact (BLM 1979a).

In estimating the total dust emissions from a coal mine, it is preferable to identify dust-producing activities and estimate emissions from each activity separately rather than to use a single emission factor for the entire mine. This method allows one to directly determine the major emission sources and their contribution to overall emissions (BLM 1979a). Potential sources of fugitive dust from coal mining are as follows (Morrison-Knudson Co. Inc. 1983):

From Mining

- facility site preparation and construction
- topsoil removal and placement
- overburden drilling, blasting, removal, and dumping
- coal drilling, blasting, and removal
- material hauling
- spoils grading
- reclamation grading and tilling
- exposed area and topsoil stockpile wind erosion
- nonmining vehicle traffic
- road maintenance and watering

From Facilities

- crusher load-in
- crushing and screening
- conveying and conveyor transfer
- coal storage pile stacking, wind erosion, and reclaiming
- railcar loading and wind erosion

These sources are not always noticeable at every mine site. For example, only the transfer conveying and access road sources normally occur at underground mines. Recent studies have shown that of the sources listed above, haul roads and access roads most often contribute the greatest ambient particulate concentrations at and near the mine sites (PEDCo Environmental Inc. 1978). Other major sources of particulates are wind erosion from exposed areas and from topsoil and overburden storage areas.

Fugitive emissions are pollutant emissions that are not normally vented through a controlled opening, such as a stack or baghouse vent. Most mining emissions are fugitive and consist of both gaseous and particulate matter.

Particulate emissions (TSP) are commonly referred to as fugitive dust. Significant gaseous pollutants are carbon monoxide, sulfur and nitrogen oxides, and hydrocarbons resulting from blasting and diesel equipment operation. In addition to these pollutants, lead is also emitted by gasoline engine operation (Morrison-Knudson Co. Inc. 1983).

Another air pollution source at coal mines is exhaust emissions from employee motor vehicles and diesel-powered haul trucks and equipment. The major gaseous emissions from these sources are carbon dioxide, carbon monoxide, hydrocarbons, nitrogen oxides, and water vapor. The amount of these

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pollutants generated at even the larger coal mines would not be significant, as found by studies of the impact of vehicle emissions associated with western coal mines (USDI 1976).

Because gaseous pollutants are emitted in relatively small amounts, the focus of attention for mining air quality impacts is fugitive dust emissions.

The impact of mining on existing particulate air quality at and near an active mine depends on three variables: climate, type of dust-producing operations, and size of the mine. Any one factor could greatly add to or reduce emissions from a mine site. For example, a small underground mine could contribute to the ambient particulate concentration in the surrounding area because of an extremely long unpaved mine access road on which mine employees travel each day.

The impacts on air quality could be greatest at the mine site where airborne particulates would be generated and at areas close to the mine site. Air quality impacts of mining would markedly decrease with distance from the site.

Air pollutants emitted during the hauling of coal by rail or barge would include dust from coal cars and barges and the exhaust of train and tug engines. Estimates of windblown coal dust range from 0.2 to 2 percent of the volume of coal carried (DOE 1978). These estimates assume that the coal is carried dry. If it is carried wet, dust emissions could be reduced to negligible amounts.

All large-scale construction would generate essentially the same types of air pollutants. The major emissions would be fugitive dust, exhaust from motor vehicles and construction equipment (mainly carbon dioxide, carbon monoxide, hydrocarbons, nitrogen oxides, and water vapor), and--in some localized areas for short periods--smoke from the burning of cleared vegetation. The amount of the emissions would depend on the size of the construction area, the method of construction, the project duration, the type of terrain, and the type of control measures employed. In low areas and in narrow, steep-sided valleys, where the build-up of polluted air would be greater than in surrounding areas, concentrations of nitrogen oxides from construction equipment could exceed the NAAQS. The actual concentrations would depend upon such factors as wind and temperature conditions, atmospheric mixing conditions, pollutant production rates, and duration of operations (BLM 1979a).

Legislative Status

The National Ambient Air Quality Standards (NAAQS) limit the total amounts of specific pollutants--carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and total suspended particulates (TSP)--allowed in the atmosphere. State standards include these parameters but may also be more stringent.

These standards were established to protect public health (primary standards) and public welfare (secondary standards). Areas that consistently violate minimum federal standards because of human activities are classified as non-attainment areas and must implement a plan to reduce ambient levels below the maximum pollution standards (Table 4-9). Under the Environmental Protection Agency's fugitive dust policy, areas that violate the TSP NAAQS but

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TABLE 4-9
NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	National Standards	
		Primary	Secondary
Ozone	1 hour	235 ug/m ³	#
Carbon monoxide	8 hour	10 mg/m ³	#
	1 hour	40 mg/m ³	#
Nitrogen dioxide	Annual	100 ug/m ³	#
Sulfur dioxide	Annual	80 ug/m ³	-
	24 hour	365 ug/m ³	-
	3 hour	-	1,300 ug/m ³
Suspended particulate matter	Annual (geometric mean)	75 ug/m ³	60 ug/m ³
	24 hour	260 ug/m ³	150 ug/m ³
Lead	Calendar quarter	1.5 ug/m ³	#
Hydrocarbons	3 hour (6-9 AM)	160 ug/m ³	#

*National standards, other than those for ozone or those based on annual averages, are not to be exceeded more than once per year.

#Same as primary standard.

Source: 40 CFR, part 50.

lack any significant industrial particulate sources and have a population below 25,000 are designated as unclassified, being neither attainment nor non-attainment areas. Unclassified areas are generally exempt from having to follow the offset provisions, retrofit controls, and new source control requirements established for non-attainment areas by the Clean Air Act.

To protect areas designated as attainment or unclassified, Congress established a system for the Prevention of Significant Deterioration (PSD) (Table 4-10) through the Clean Air Act Amendments of 1977. Areas were classified by the additional TSP and sulfur dioxide degradation that would be allowed. PSD Class I areas, predominantly national parks, certain wilderness areas, and a few Indian reservations have the greatest limitations: virtually any degradation would be significant. Areas where moderate, controlled growth can occur were designated as PSD Class II. PSD Class III areas are those that allow the greatest degree of degradation.

The current PSD regulations apply to coal mines only if over 250 tons of regulated pollutant are emitted annually through a stack or vent (controllable source). Because fugitive emission sources are not considered and most coal mines do not have a large, adjacent processing facility, the proposed mines are not likely to be subject to PSD regulations. Specific applicability would need to be determined once mining plans are developed. (See Chapter 1, Clean Air Act, for more detail on the PSD permit system.)

Higher TSP concentrations are expected near towns because of local combustion sources and unpaved roads. Significant regional levels probably result from fugitive dust (mainly windblown). Because fugitive dust particulates are larger than those produced in combustion, they settle relatively quickly and

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TABLE 4-10
PSD INCREMENTS

Pollutant	Averaging Time	Increments (ug/m3)		
		Class I	Class II	Class III
Sulfur dioxide	Annual	2	20	40
	24 hour	5	91	182
	3 hour	25	512	700
Particulate matter	Annual	5	19	37
	24 hour	10	37	75

Source: 40 CFR, part 52.21

present little inhalation health threat. The Environmental Protection Agency (EPA) has recognized this difference by developing proposed standards for particulates less than 10 microns in diameter, commonly called inhalable particulates and abbreviated as PM-10. (EPA's new TSP regulation proposals are discussed in Chapter 1.)

PSD Class I regulations also address the potential for impacts to air quality-related values. These values include visibility, odors, and impacts to plants, animals, soils, water, and geologic and cultural structures. Visibility impacts can occur from atmospheric increases in small, light-scattering particles or increases in light-absorbing gases (typically nitrogen dioxide). The nature of potential coal mining emissions make direct impacts to air quality-related values unlikely (BLM 1983b). A possible source of impact to air quality-related values is acid precipitation. Mechanisms of acid precipitation formation are under study, and preliminary results have correlated ambient sulfuric and nitric acids with combustion byproducts (sulfates and nitrates).

Impacts by Alternative

This discussion addresses the aggregated particulate air emissions resulting from the exploration, extraction, beneficiation, and transportation cycles of coal development in each of the six regions for 1990, 1995, and 2000 under each alternative. (See Appendix 4, Air Quality Methodology, for impact calculation methods.) Table 4-11 presents data showing tons per year of particulate air emissions for each year, alternative, and region. Table 4-12

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TABLE 4-11
TOTAL SUSPENDED PARTICULATES
(tons per year)

Year	Production Level	No New Federal Leasing	Preference Right and Emergency Leasing	Proposed Action			
Fort Union Region							
1990	Low	22,800	--	--			
	Medium	27,600	--	--			
	High	27,600	--	--			
1995	Low	25,200	--	--			
	Medium	25,200	--	--			
	High	25,200	--	--			
2000	Low	27,600	--	--			
	Medium	28,800	--	--			
	High	30,000	--	--			
Powder River Region							
		Wyoming	Montana	Wyoming	Montana	Wyoming	Montana
1990	Low	176,400	38,400	--	--	--	--
	Medium	186,000	40,800	--	--	--	--
	High	198,000	40,800	--	--	--	--
1995	Low	228,000	38,400	223,200	37,200	219,600	37,200
	Medium	240,000	43,200	234,000	42,000	230,400	42,000
	High	279,600	45,600	271,200	--	261,600	--
2000	Low	237,600	48,000	--	--	234,000	45,600
	Medium	274,800	48,000	270,000	--	264,000	--
	High	298,800	92,400	318,000	73,200	331,200	50,400

Note: TSP values for the Proposed Action and the Preference Right and Emergency Leasing Alternative are shown only where they would differ from No New Federal Leasing.

See Appendix 4 for the methodology used in calculating TSP.

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TABLE 4-11 (continued)
TOTAL SUSPENDED PARTICULATES
(tons per year)

Year	Production Level	No New Federal Leasing		Preference Right and Emergency Leasing		Proposed Action	
Green River-Hams Fork Region							
		Wyoming	Colorado	Wyoming	Colorado	Wyoming	Colorado
1990	Low	32,400	13,600	33,600	12,000	33,600	12,000
	Medium	32,400	14,000	33,600	13,600	33,600	12,400
	High	32,400	14,000	33,600	13,600	33,600	13,600
1995	Low	26,400	13,600	--	--	--	--
	Medium	26,400	14,000	--	--	--	--
	High	26,400	16,000	33,600	15,600	33,600	13,600
2000	Low	24,000	14,000	--	--	22,800	13,600
	Medium	24,000	14,000	--	15,600	22,800	13,600
	High	25,200	21,600	38,400	18,800	38,400	14,000
Uinta-Southwestern Utah Region							
		Colorado	Utah	Colorado	Utah	Colorado	Utah
1990	Low	2,800	8,000	2,400	8,400	2,000	8,800
	Medium	3,200	8,000	3,600	8,400	2,000	10,000
	High	3,600	8,000	--	8,400	2,000	10,000
1995	Low	2,000	10,000	--	12,800	1,600	14,000
	Medium	2,400	10,000	3,200	12,800	2,000	14,800
	High	3,600	10,000	3,200	12,800	2,000	18,000
2000	Low	2,800	10,800	--	12,000	1,600	16,400
	Medium	2,800	10,800	3,200	12,000	2,400	17,200
	High	3,600	10,800	3,200	12,000	--	20,400

Note: TSP values for the Proposed Action and the Preference Right and Emergency Leasing Alternative are shown only where they would differ from No New Federal Leasing.

See Appendix 4 for the methodology used in calculating TSP.

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TABLE 4-11 (concluded)
TOTAL SUSPENDED PARTICULATES
(tons per year)

Year	Production Level	No New Federal Leasing	Preference Right and Emergency Leasing	Proposed Action
San Juan River Region				
1990	Low	26,400	--	--
	Medium	26,400	--	--
	High	27,600	26,400	26,400
1995	Low	31,200	28,800	28,800
	Medium	34,800	32,400	32,400
	High	37,200	--	34,800
2000	Low	40,800	--	36,000
	Medium	40,800	--	36,000
	High	44,400	--	40,800
Alabama Subregion*				
1990	Low	34,400	--	--
	Medium	34,400	--	--
	High	34,400	--	--
1995	Low	40,000	--	--
	Medium	40,000	--	--
	High	40,000	--	--
2000	Low	41,600	--	--
	Medium	42,800	--	--
	High	46,400	--	--

Note: TSP values for the Proposed Action and the Preference Right and Emergency Leasing Alternative are shown only where they would differ from No New Federal Leasing.

*This alternative would involve emergency but not preference right leasing in the Alabama Subregion.

See Appendix 4 for the methodology used in calculating TSP.

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TABLE 4-12
PERCENT CHANGE IN TSP EMISSIONS*

	Production Level	No New Federal Leasing	Preference Right and Emergency Leasing		Proposed Action	
Year						
Powder River Region						
			WY	MT	WY	MT
1990	Low	--	--	--	-1	--
	Medium	--	--	--	-1	--
	High	--	--	--	--	--
1995	Low	--	-2	-3	-4	-3
	Medium	--	-3	-3	-4	-3
	High	--	-3	--	-6	--
2000	Low	--	--	--	-2	-5
	Medium	--	--	--	-4	--
	High	--	+6	-21	+11	-45
Green River-Hams Fork Region						
			WY	CO	WY	CO
1990	Low	--	+4	-12	+4	-12
	Medium	--	+4	-3	+4	-11
	High	--	+4	-3	+4	-3
1995	Low	--	--	--	--	--
	Medium	--	--	--	--	--
	High	--	+27	-3	+27	-15
2000	Low	--	--	--	-5	-3
	Medium	--	--	+11	-5	-3
	High	--	+52	-13	+52	-35
Uinta-Southwestern Utah Region						
			CO	UTAH	CO	UTAH
1990	Low	--	-14	+5	-29	+10
	Medium	--	+13	+5	-38	+25
	High	--	--	+5	-44	+25
1995	Low	--	--	+28	-20	+40
	Medium	--	+33	+28	-17	+48
	High	--	-11	+28	-44	+80
2000	Low	--	--	+11	-43	+52
	Medium	--	+14	+11	-14	+59
	High	--	-11	+11	--	+89
San Juan Region						
1990	Low	--	--	--	--	--
	Medium	--	--	--	--	--
	High	--	--	-4	--	-4
1995	Low	--	--	-8	--	-8
	Medium	--	--	-7	--	-7
	High	--	--	--	--	-6
2000	Low	--	--	--	--	-12
	Medium	--	--	--	--	-12
	High	--	--	--	--	-8

*In the Fort Union Region and the Alabama Subregion under Preference Right and Emergency Leasing and the Proposed Action, TSP emissions would not change from No New Federal Leasing. These two regions are thus not included on this table.

Percentages shown on this table were derived from Table 4-11.

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shows percent total increase in TSP emissions for applicable year, alternative, and region as compared to the 1990 No New Federal Leasing Alternative in the respective regions.

The data in these tables is presented by states within the regions because states have jurisdiction over air quality programs. Because forecasts call for coal production shifts among states, the emissions data in Table 4-11 and the percentages in Table 4-12 should be evaluated together and for a region as a whole to help keep the results in context. The emissions data is directly proportional to coal production (see Appendix 4, Air Quality Methodology), and one state within a region could have a large percent increase while the other state could have a large percent decrease. On the balance, however, the regional percentage change in emissions from that under the No New Federal Leasing baseline might be small or non existent.

No New Federal Leasing. Percentage increases in emissions over 1990 for 1995 and 2000 would be 11 and 21 percent for the Fort Union Region; 24 percent (1995) and 33 percent (2000) for the Powder River Region; -13 and -17 percent for the Green River-Hams Fork Region; 11 and 26 percent for the Uinta-Southwestern Utah Region; 18 and 55 percent for the San Juan River Region; and 16 and 21 percent for the Alabama Subregion.

Preference Right and Emergency Leasing. Table 4-12 shows percentages of particulate emission change for the coal regions. Under Preference Right and Emergency Leasing, particulate emissions would change in all regions except the Fort Union Region and the Alabama Subregion.

Proposed Action. As shown in Table 4-12, under the Proposed Action, particulate emissions would change in all regions except the Fort Union Region and the Alabama Subregion.

SOILS AND VEGETATION

ASSUMPTIONS

Land disturbance figures are for surface and subsurface mining and related coal beneficiation. Other land disturbance related to transportation, conversion, consumption facilities, and population increases is not measured because it would occur at unknown levels and locations. The function of the resource management plans and prelease review is to identify fragile areas and obvious reclamation problems to avoid leasing in areas where coal mining would significantly affect soil and vegetation. The Surface Mining Control and Reclamation Act (SMCRA) also requires premine soil studies to identify problems. Permits will not be granted to mines that cannot meet SMCRA's standards. (See Appendix 5, Reclamation and Erosion Control on Surface-Mined Lands.)

AFFECTED ENVIRONMENT

The six coal regions are located in 36 Major Land Resource Areas (MLRAs) as described by the Soil Conservation Service (SCS 1981). MLRAs are geographically associated areas with particular patterns of soils, vegetation, climate, water resources, and land uses (Map 4-2). Following are the setting, soil, and vegetation descriptions for each of the six coal regions.

SOILS AND VEGETATION

Fort Union Coal Region

Setting. The Fort Union Region is located in 11 MLRAs. The areas of coal occur mainly in MLRAs 53A--Northern Dark Brown Glaciated Plains, 53B--Central Dark Brown Glaciated Plains, 54--Rolling Soft Shale Plains, 58A--Northern Rolling High Plains (northern part) and 58C--Northern Rolling High Plains (northeastern part). The region's northern part (MLRAs 53A, 53B) consists mainly of gently undulating till plains. Elevations range from 1,070 to 2,750 feet, average annual precipitation ranges from 11 to 18 inches, and the average frost-free period ranges from 110 to 135 days.

The region's southern portion (MLRAs 54, 58A, and 58C) consists mainly of moderately rolling dissected plains underlain by shale, siltstone, and sandstone. Buttes, badlands, and moderately steep and steep slopes adjoin the major valleys. Elevations range from 1,520 to 3,050 feet, average annual precipitation ranges from 8 to 12 inches, and the average frost-free season ranges from 110 to 140 days.

Soils. Soils in the region's northern parts are mainly deep, well drained, neutral to mildly alkaline, and medium textured, forming from glacial till on nearly level to rolling till plains. Soils in the southern parts are mainly moderately deep and deep, well drained, neutral to mildly alkaline loamy and clayey. They are forming on materials derived from soft shale, siltstone, and sandstone and are on gently rolling to strongly sloping dissected plains.

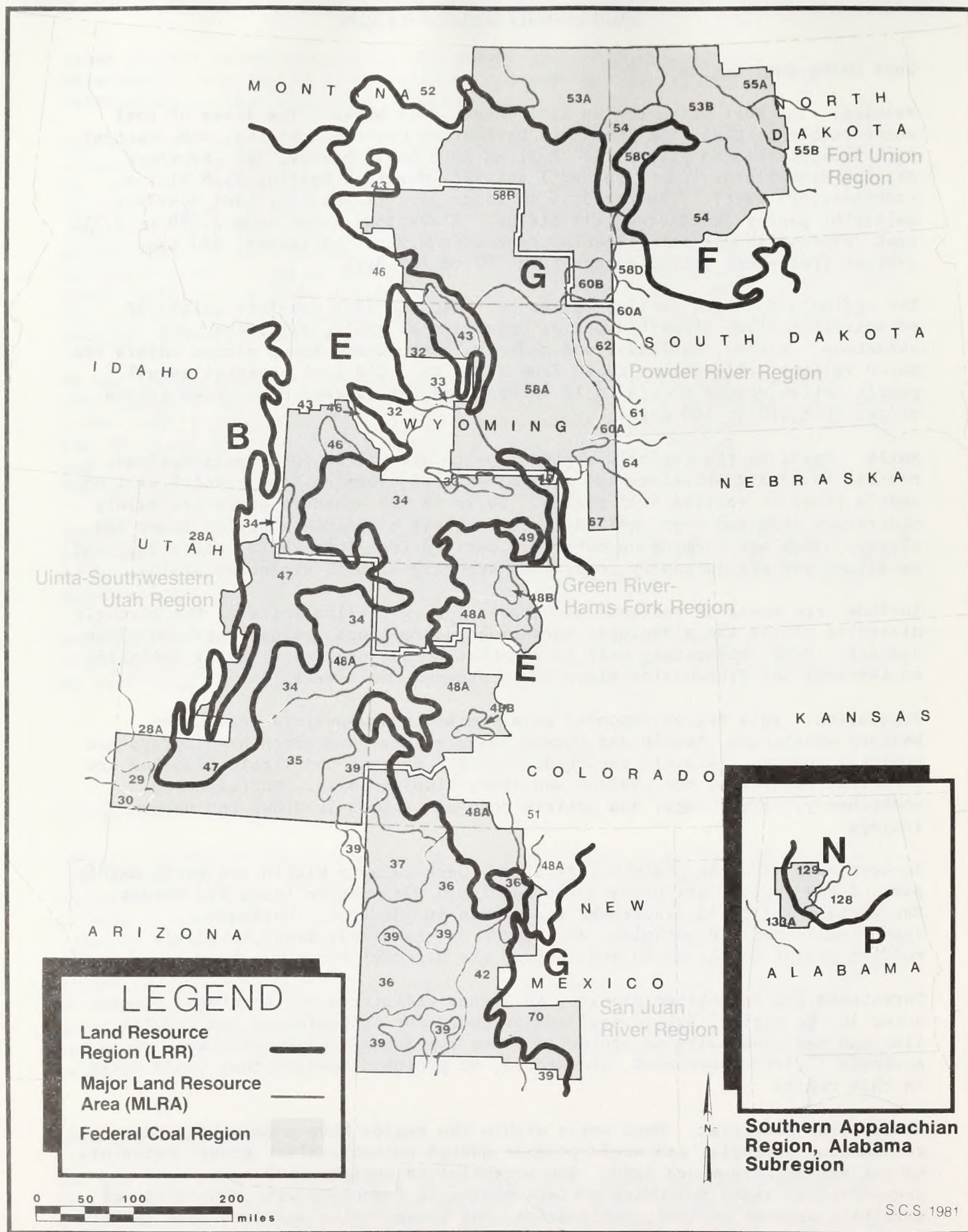
Included are areas of badlands and steep-sloping shallow soils on the strongly dissected plains and sideslopes bordering intermittent drainageways and river valleys. Deep, moderately well to somewhat poorly drained alluvial soils lie on terraces and floodplains along lower streams and rivers.

Vegetation. This region supports mainly mixed grass-prairie vegetation. Western wheatgrass, needle and thread, blue gramma, and green needlegrass are dominant species. Prairie sandreed, sideoats gramma, and little bluestem are important species on the shallow and steep-sloping soils. Buffaloberry, chokecherry, silver sage, and prairie rose are common in draws and narrow valleys.

Interspersed with the prairie vegetation, particularly within the North Dakota part of the region, are woody draws populated with native trees and shrubs. Shelterbelt and field windbreaks are common in the area. Wetlands, specifically prairie potholes, are common on the nearly level to gently rolling plains to the north and east of the Missouri River.

Threatened and Endangered Plants. No listed endangered or threatened plants occur in the region, but several are proposed for inclusion on the federal list and may eventually be protected under the Endangered Species Act. Appendix 3 lists threatened, endangered, or proposed species that could occur in this region.

Reclamation Potential. Most soils within the region have a fair to good reclamation potential and would provide enough suitable plant growth materials to reclaim surface-mined land. The potential to reclaim land to a near-original state following surface mining is favorable with proper use of effective erosion control, reclamation, and revegetation measures (BLM 1982a).



MAP 4-2 LAND RESOURCE REGIONS AND MAJOR LAND RESOURCE AREAS OF THE FEDERAL COAL REGIONS

SOILS AND VEGETATION

Powder River Region

Setting. The Powder River Region is located in 14 MLRAs. The areas of coal occur mainly within the 58A MLRA, Northern Rolling High Plains (northern part), and 58B MLRA, Northern Rolling High Plains (southern part). These MLRAs lie on broad dissected plains underlain by shale, siltstone, and sandstone. Slopes are mostly gently rolling to steep with wide belts of steeply sloping badlands bordering some of the larger river valleys. In places, flat-topped, steep sideslope buttes rise sharply above the plains.

This region has a continental, semiarid climate. Average annual precipitation ranges from 12 to 20 inches, but as much as 30 inches falls in the mountains. The average frost-free period is 100 to 140 days. Elevations range from 2,500 to 5,500 feet. One of the most important climatic features is the occurrence of drought cycles.

Soils. Soils in the region are mainly well drained, mildly to strongly alkaline sandy loam, loam, and clay loam, which are forming in materials derived from sandstone and shale. Deep and moderately deep, gently sloping to sloping soils are on sedimentary uplands and sideslopes. Shallow soils occur mainly on moderately steep and steep sideslopes and ridges where sedimentary formations are near the surface. Soils on the nearly level floodplains, terraces, alluvial fans, and footslopes are deep and productive. Some soils with fluctuating water tables, including small areas of moderately to strongly saline soils, occur along rivers.

Vegetation. Native vegetation consists mainly of short-grass prairie, grassland-sagebrush and sagebrush steppe, and areas of ponderosa pine (Kuchler 1979). Dominant grass species include western wheat, blue gramma, blue bunch wheatgrass, green needlegrass, needle and thread, and little bluestem. Typical floodplain vegetation includes cottonwood, willow, chokecherry, greasewood, saltgrass, and western wheatgrass.

Threatened and Endangered Plants. No plant species in the Powder River Region are listed as threatened or endangered, but some species are being considered for listing. Appendix 3 lists threatened, endangered, and proposed species that could occur in this region.

Reclamation Potential. The dominant soils within the region have a fair to good reclamation potential and would provide suitable plant growth materials to reclaim surface-mined land. The potential to reclaim land to a near-original state following surface mining is favorable with proper and timely use of effective erosion control, reclamation, and revegetation measures (BLM 1981a).

Green River-Hams Fork Region

Setting. The Green River-Hams Fork Coal Region consists of a series of parallel mountain ranges and valleys. The region is located in eight MLRAs. The areas of coal occur mainly in MLRA 34--Central Desertic Basins, Mountains, and Plateaus; MLRA 47--Wasatch and Uinta Mountains; and MLRA 48A--Southern Rocky Mountains. The portion in MLRA 34 has piedmont plains, alluvial fans, and piedmont slopes extending from the surrounding mountains to form broad intermountain basins. Elevations range from 5,700 to 8,300 feet; average annual precipitation ranges from 6 to 12 inches; and the average frost-free

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period lasts from 80 to 100 days. The part of the region in MLRAs 47 and 48A lies in the foothills of strongly sloping to steep mountains, where average annual precipitation ranges from 14 to 30 inches and the frost-free period lasts from 60 to 100 days.

Soils. Where coal most commonly occurs, the soils are mainly well drained, neutral to moderately alkaline and saline, sandy loams to clay loams. They are forming in mixed materials derived mainly from sedimentary and some igneous rocks. Soils within the smoother sloping basins are deep clay loams. Soils on the low mountain footslopes and foothills (MLRAs 47 and 48) are moderately deep to deep, well drained, neutral to mildly alkaline, sandy loams, loams, and clay loams containing varying amounts (5 to 50 percent and more) of coarse fragments.

Vegetation. The Green River-Hams Fork Region is part of the cold desert biome and consists mainly of sagebrush or saltbush-greasewood dominated communities. Other vegetation types in this region include mountain shrub, mixed conifer, pinyon-juniper, and small areas of riparian vegetation.

The sagebrush community consists of a mixture of low-growing shrubs dominated by sagebrush with a variable understory of perennial grasses and forbs. Understory vegetation includes bluebunch wheatgrass, thick wheatgrass, Indian ricegrass, prairie junegrass, cheatgrass, brome, lupine, rabbitbrush, broom snakeweed, and goldenweeds.

Where the salt content of the soil is relatively high, sagebrush-dominated communities are replaced by saltbush-greasewood associations. Dominant species are Nuttall saltbush, shadscale saltbush, fourwing saltbush, and black greasewood. Associated understory includes alkali sacaton, bottlebrush, squirreltail, thickspike wheatgrass, and many of the understory species of the sagebrush community.

Shrub communities of the higher elevations are dominated by serviceberry-snowberry-mahogany associations with understories that include thickspike wheatgrass, prairie junegrass, bluegrasses, western yarrow, asters, and milkvetch. On well-drained, weakly developed, shallow, gravelly soils, shrub woodlands, dominated by Rocky Mountain and Utah juniper, predominate. Associated species include big sagebrush, low sagebrush, rabbitbrush, mountain mahogany, prickly pear, and a variety of grasses, phloxes, and goldenweeds.

Depending upon slope, aspect, and elevation, forested mountains may contain associations of pinyon-juniper, spruce-Douglas fir, ponderosa pine-lodgepole, or a mixture of evergreen-aspen. Understory species include snowberries, blueberries, mountain mahogany, pine reedgrass, lupines, mountain brome, and grasses. Broadleaf forests, consisting mainly of willow and cottonwood with grass understories, occur mainly on floodplains along perennial streams. Barren areas associated with rock outcrops have a limited vegetation cover of mountain mahogany, serviceberry, wild buckwheats, big sagebrush, saltbushes, and prairie junegrasses.

Threatened and Endangered Plants. Field surveys of specific tracts within the region found no federally listed threatened or endangered plants or sensitive or rare plant species (BLM 1983b), but 18 species are proposed for such listing. Appendix 3 lists threatened, endangered, and proposed species that could occur in this region.

SOILS AND VEGETATION

Reclamation Potential. The reclamation potential of disturbed land varies within the region. Limited precipitation and areas of shallow and strongly saline and alkaline soils are the main reclamation problems. Most soils within the area have a fair to good reclamation potential and would provide suitable plant growth material to reclaim surface-mined land. By using the best reclamation technology, the limitations of soil and precipitation can be reduced. Each specific location of land disturbance will require separate evaluations (BLM 1983b).

Uinta-Southwestern Utah Region

Setting. The Uinta-Southwestern Utah Region has extremes in both topography and climate. The region includes 10 MLRAs, but the coal areas occur mainly in MLRA 34--Central Desertic Basins, Mountains, and Plateaus; MLRA 35--Colorado and Green River Plateaus; MLRA 48--Southern Rocky Mountains; and MLRA 47--Wasatch and Uinta Mountains. The part in MLRA 34 has broad intermountain basins with elevations of 5,700 to 6,800 feet. Average annual precipitation ranges from 6 to 12 inches, and average frost-free periods range from 80 to 100 days.

The part in MLRA 35 consists of gently sloping to strongly sloping plains, interrupted by scarps, deep incised canyons, and abruptly rising volcanic plugs. Average annual precipitation ranges from 5 to 14 inches, and the average frost-free period ranges from 110 to 180 days. The part of the region in MLRAs 47 and 48A lies in the foothills portion of the strongly sloping to steep mountains, where the average annual precipitation ranges from 14 to 30 inches and the average frost-free period ranges from 60 to 100 days. Many of the coal deposits are in the flanks of the major peaks and plateaus at intermediate elevations.

Soils. Soils where coal most commonly occurs in the basin area (MLRA 34) and plains area (MLRA 35) are mainly well drained, neutral and moderately alkaline, nonsaline to moderately saline sandy loam, loams, and clay loams. These soils are forming in materials derived mainly from sedimentary rocks. In much of this area, high evapotranspiration rates have caused salt concentrations. Salts are generally more concentrated in soils on flat valley floors and closed basins, and where soils are forming from shale with inherent high concentrations of salts. The more productive soils most commonly occur on benches, alluvial fans, and floodplains. Soils on the low mountain footslopes and foothills (MLRAs 47 and 48A) are moderately deep to deep, well drained, neutral to mildly alkaline sandy loams and loams containing varying amounts (10 to 50 percent and more) of coarse fragments.

Vegetation. Native vegetation ranges, often within a few miles, from cold desert through pinyon-juniper woodland to montane coniferous forest. Narrow belts of streamside vegetation cross all major vegetation types. MLRA 34 supports mainly grass-shrub type vegetation with needle and thread, Indian ricegrass, western wheatgrass and big sage as the dominant species. Scattered Rocky Mountain juniper commonly grows on shallow soils on steeper slopes. MLRA 35 supports desert shrub and woodland vegetation at higher elevations. At lower elevations are galleta grass, alkali sacaton, Indian ricegrass, bottlebrush squirreltail, and needle grasses intermixed with fourwing saltbush and winterfat. Greasewood and shadscale are part of the plant community on saline soils.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

MLRAs 47 and 48A support grasses, mountain shrub, sagebrush-grass, pinyon-juniper, conifer, and aspen vegetation. Big sagebrush and bluebunch wheatgrass are dominant sagebrush-grass species. Gambel oak, curlleaf and birch leaf mountain mahogany, chokecherry, snowberry, bluebunch wheatgrass, and mountain brome are dominant species in the mountain shrub area in mountain foothills.

Threatened and Endangered Plants. Surveys in central Utah have found the candidate endangered species Hymenoxys helenioides, Hydysarum occidentale variety canone within the region. Although several listed species occur within the region (Appendix 3) no other officially listed or candidate threatened or endangered species are known to exist on or near any of the existing leased tracts. Appendix 3 lists threatened, endangered, and proposed species that could occur in this region.

Reclamation Potential. Low precipitation and areas of strongly saline and alkaline soils are this region's main reclamation problems. Most soils in the region have a fair to good reclamation potential, but each specific location of land disturbance would require separate evaluation. Most coal mining in this region is subsurface (BLM 1984c).

San Juan River Region

Setting. The San Juan River Region consists of a basin with mesas, rolling plains, and badlands that are lower than the surrounding mountain ranges. The region is located in seven MLRAs. The areas of coal occur mainly in MLRA 36--New Mexico and Arizona Plateaus and Mesas; MLRA 37--San Juan River Valley, Mesas and Plateaus; MLRA 39--Arizona and New Mexico Mountains; and a portion of MLRA 48A--Southern Rocky Mountains. MLRA 36 has foothills with plateaus and mesas, including broad basins, valleys, and alluvial fans. Intermittent drainageways (washes and arroyos) are common. Elevations range from 4,200 to 8,600 feet; average annual precipitation ranges from 8 to 11 inches; and the average frost-free period ranges from 180 to 240 days.

MLRA 39 has steep to very steep mountains, including associated foothills, mountain meadows, and narrow floodplains. Elevations range from 4,800 to 8,600 feet; annual precipitation ranges from 16 to 25 inches; and the average frost-free period ranges from less than 70 days at higher elevations to 115 days at lower elevations.

MLRA 37 consists of gently sloping broad valleys and plains bordered by deeply dissected bands of steep slopes. Mesas and isolated mountain ranges also occur. Elevations range from 4,550 to 6,100 feet; average annual precipitation ranges from 6 to 12 inches; and the average frost-free period is 140 to 165 days.

Soils. Where the region's coal most commonly occurs, soils are well drained, neutral to strongly alkaline loams and clay loams. Areas of saline soils are also common. Deep, loamy alluvial soils occur along the floodplains and on alluvial fans and make up only a small percentage of the region. Deep and moderately deep soils occur on the gently to strongly sloping dissected uplands and make up the largest portion of the region. Strong calcium carbonate horizons within 12 to 40 inches of the surface are common in many of the soils in the region.

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Vegetation. This region consists of three major vegetation types: grassland and desert shrub (lower elevations); pinyon-juniper (5,000 to 7,000 feet) and mixed conifer (above 7,000 feet). Major grass species include Indian ricegrass, blue grass, alkali sacaton, sand dropseed, and galleta. Shadscale, big sagebrush, greasewood, winterfat, and fourwing saltbush commonly occur in bottomlands, valleys, and uplands. Pinyon-juniper woodland along with mountain mahogany and western wheatgrass occurs at higher elevations. Mixed conifers consisting mainly of ponderosa pine, some Douglas fir, and spruce occur on steep-sloping north-facing mountain slopes.

Threatened and Endangered Plants. Pediocactus knowltonii is listed as an endangered species occurring in northeastern San Juan County, New Mexico. The Sclerocactus mesae verdea associated with Mancos shale has been documented as occurring within the area (San Juan County, New Mexico and Montezuma County, Colorado). The New Mexico State Heritage Program identified Astragalus wingatas and Atriplex pleiantha as being state sensitive species and proposed federal threatened and endangered species occurring within the region (BLM 1983e). Appendix 3 lists threatened, endangered, and proposed species that could occur in this region.

Reclamation Potential. Low precipitation and strongly saline and alkaline soils in the San Juan River Region are site characteristics that strongly affect reclamation. Most of the region's soils have a fair to good reclamation potential and would provide adequate suitable plant growth materials for reclaiming surface mining disturbance. Information on site-specific elevations would be needed to conduct proper reclamation procedures. The potential to reclaim and revegetate land is favorable with proper and timely use of effective reclamation, erosion control, and revegetation measures (BLM 1984c).

Alabama Subregion

Setting. The Alabama Subregion is located in three MLRAs. The region has a moist, temperate climate with an average annual precipitation ranging from 52 to 56 inches and an average frost-free period ranging from 170 to 210 days but reaching 240 days in some valleys. Elevations range from 600 to 2,500 feet.

Soils. The subregion's soils are mainly well drained to moderately well drained, mildly to moderately acid, and low in organic matter and have subsurface horizons of clay accumulations. Soil depths range from shallow on the steep sandstone and shale ridges to very deep in the nearly level to gently sloping valleys and on the sloping uplands. Included are small poorly drained and somewhat poorly drained low wetlands. The soils are generally low in fertility and are susceptible to a moderate to severe water erosion hazard.

Vegetation. This region consists mainly of mixed hardwood-pine forest vegetation (Kuchler 1979). Major overstory species are loblolly pine, shortleaf pine, slash pine, pitch pine, longleaf pine, sweet gum, yellow popular, red oak, and white oak. Dogwood, sourwood, huckleberries, little bluestem, Elliott bluestem, native lespedezas and low panicums are common understory species. Aquatic and riparian vegetation occurs along perennial and intermittent streams.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Threatened and Endangered Plants. Alabama has no official list or legislation dealing with protected plants. Although no federally listed threatened or endangered plants are known to occur within the three-county subregion, several are proposed for listing and are under consideration by the FWS (see Appendix 3). Proposed species are included for planning purposes only. Although they have no legal status under the Endangered Species Act, they should be considered in planning and assessing future individual mine plans.

Reclamation Potential. The natural productivity, combined with a favorable climate gives the Alabama Subregion a high potential for reclamation. Land disturbed by coal mining can be readily reclaimed. Ground cover of grasses and legumes could be established within 1 year, and trees could reach a size suitable for harvesting within 30 years (BLM 1981d).

IMPACTS

The following general discussion of soil and vegetation impacts applies to all regions, alternatives, and production levels.

This section addresses the amount of land in each coal region that would be disturbed annually by mining and coal beneficiation from 1990 to 2000 at each production level for each alternative. Other land disturbances related to transportation, conversion, and consumption facilities cannot be measured because they would occur at an unknown level and location.

Land disturbance impacts to soils and vegetation would depend on the physical setting and conditions at each specific site. Because specific sites are not known, land disturbance impacts are discussed quantitatively only to the extent possible. Table 4-13 shows estimated average annual land disturbance of coal mining at projected production levels.

Reclamation Potential and Effectiveness

All surface coal mining under each alternative, including No New Federal Leasing, would be regulated by the reclamation requirements of the Surface Mining Control and Reclamation Act (SMCRA) (see Appendix 5). The only variations in reclamation requirements among the alternatives would involve the number of acres requiring reclamation and the differing intensity of reclamation efforts for the type of land being disturbed.

The basic purposes of SMCRA that pertain to reclamation are as follows: (1) to assure that surface mining is not allowed if the required reclamation is not technologically and economically feasible, (2) to assure that reclamation is as contemporaneous with mining as possible, and (3) to promote reclamation of abandoned mine areas. The main reclamation requirements are in the environmental protection performance standards (Section 515 of SMCRA), which require mined land to be restored to a condition equal to or better than its premining condition.

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TABLE 4-13
AVERAGE ANNUAL LAND DISTURBANCE
(acres)

Fort Union Region									
Production Level	No New Federal Leasing			Preference Right and Emergency Leasing***			Proposed Action***		
	Existing Mines	New Mines	Total Mines	Existing Mines	New Mines	Total Mines	Existing Mines	New Mines	Total Mines
<u>1990</u>									
Low	1,169			--			--		
Medium	1,169			--			--		
High	1,169			--			--		
<u>1995</u>									
Low	1,607			--			--		
Medium	1,607			--			--		
High	1,607			--			--		
<u>2000</u>									
Low	1,461			--			--		
Medium	1,461			--			--		
High	1,461			--			--		

Powder River Region									
Production Level	No New Federal Leasing			Preference Right and Emergency Leasing***			Proposed Action***		
	Wyoming	Montana	Total	Wyoming	Montana	Total	Wyoming	Montana	Total
<u>1990</u>									
Low	2,661	579	3,240	--	--	--	--	--	--
Medium	2,806	615	3,421	--	--	--	--	--	--
High	2,987	615	3,602	--	--	--	--	--	--
<u>1995</u>									
Low	3,439	579	4,018	3,367	561	3,928	3,312	561	3,873
Medium	3,620	652	4,272	3,530	634	4,164	3,475	634	4,109
High	2,896	688	4,905	2,896	--	4,779	2,896	--	4,634
	(1,321)			(1,195)			(1,050)		
	4,217**			4,091**			3,946		
<u>2000</u>									
Low	2,896	724	4,308	--	--	--	2,896	688	4,218
	(688)			--	--	--	(634)		
	3,584			--	--	--	3,530		
Medium	2,896	724	4,869	2,896	--	4,797	2,896	--	4,706
	(1,249)			(1,177)			(1,086)		
	4,145			4,073			3,982		
High	2,896	941	5,901	2,896	941	5,901	2,896	760	5,756
	(1,611)	(453)		(1,901)	(163)		(2,100)		
	4,507	1,394		4,797	1,104		4,996		

Note: Numbers in parentheses represent acres disturbed by new mines.

*Includes North Dakota with small amounts in Montana.

**Acres that would be disturbed by existing and new mines

***Figures are shown only where they differ from those for No New Federal Leasing.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-13 (continued)
AVERAGE ANNUAL LAND DISTURBANCE
(acres)

Green River-Hams Fork Region									
Production Level	No New Federal Leasing			Preference Right and Emergency Leasing*			Proposed Action*		
	Wyoming	Colorado	Total	Wyoming	Colorado	Total	Wyoming	Colorado	Total
<u>1990</u>									
Low	1,877	714	2,591	1,946	640	2,586	1,946	640	2,586
Medium	1,877	719	2,596	1,946	714	2,660	1,946	645	2,591
High	1,877	719	2,596	1,946	714	2,660	1,946	714	2,660
<u>1995</u>									
Low	1,529	714	2,243	--	--	--	--	--	--
Medium	1,529	719	2,248	--	--	--	--	--	--
High	1,529	799	2,328	1,946	794	2,740	1,946	714	2,660
<u>2000</u>									
Low	1,390	719	2,109	--	--	--	1,321	714	2,035
Medium	1,390	719	2,109	1,390	794	2,184	1,321	714	2,035
High	1,460	866	2,326	2,224	832	3,056	2,224	719	2,943
Uinta-Southwestern Utah Region									
Production Level	No New Federal Leasing			Preference Right and Emergency Leasing*			Proposed Action*		
	Colorado	Utah	Total	Colorado	Utah	Total	Colorado	Utah	Total
<u>1990</u>									
Low	39	110	149	33	116	149	28	121	149
Medium	44	110	154	50	116	165	28	121	149
High	50	110	160	50	116	165	28	121	149
<u>1995</u>									
Low	28	138	166	28	176	204	22	193	215
Medium	33	138	171	44	176	220	28	204	232
High	50	138	188	44	176	220	28	248	276
<u>2000</u>									
Low	39	149	188	39	165	204	22	226	248
Medium	39	149	188	44	165	209	33	237	270
High	50	149	198	44	165	209	50	281	331

Note: No land disturbance from new mines is projected for the Green River-Hams Fork Region.

*Figures are shown only where they differ from those for No New Federal Leasing.

**Acres that would be disturbed by existing and new mines.

SOILS AND VEGETATION

TABLE 4-13 (concluded)
AVERAGE ANNUAL LAND DISTURBANCE
(acres)

San Juan River Region***			
Production Level	No New Federal Leasing	Preference Right and Emergency Leasing*	Proposed Action*
<u>1990</u>			
Low	904	--	--
Medium	904	--	--
High	945	904	904
<u>1995</u>			
Low	1,068	986	986
Medium	1,192	1,110	1,110
High	1,274	--	1,192
<u>2000</u>			
Low	1,397	--	1,233
Medium	1,397	--	1,233
High	1,521	--	1,397
Alabama Subregion			
	No New Federal Leasing	Preference Right and Emergency Leasing*	Proposed Action*
<u>1990</u>			
Low	2,933 (5,109) 8,042**	--	--
Medium	2,933 (5,109) 8,042**	--	--
High	2,933 (5,109) 8,042**	--	--
<u>1995</u>			
Low	3,134 (6,249) 9,383**	--	--
Medium	3,134 (6,249) 9,383**	--	--
High	3,134 (6,249) 9,383**	--	--
<u>2000</u>			
Low	3,335 (6,383) 9,718**	--	--
Medium	3,335 (6,718) 10,053**	--	--
High	3,335 (7,388) 10,723**	--	--

Note: Numbers in parentheses represent acres that would be disturbed by new mining.

*Figures are shown only where they differ from those for No New Federal Leasing.

**Acres that would be disturbed by existing and new mines.

***Mining in the San Juan Region would occur mostly in New Mexico.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This section addresses the reclamation potential and problems expected for the coal-producing regions. Because specific sites to be mined or reclaimed are not known at this level of analysis, the discussion is necessarily general. Determining reclamation potential requires detailed information specific to the sites to be reclaimed. Coal development in all regions could affect lands with varying potentials for reclamation. Therefore, at this general level of analysis, alternatives will vary by the differing amount of land that would require reclamation.

Reclamation potential depends upon climate, inherent chemical and physical properties of the overburden, availability of suitable plant growth material, and the biological character of the area. Among the factors that would affect reclamation success are type, toxicity, depth, and fertility of the soils; amounts and frequency of precipitation; erosion potential; slope and aspect of the land; choice of plants used in revegetation; timing of seeding or planting; and proposed use of the reclaimed area. See Appendix 5 for a more detailed discussion.

Water availability would directly influence the revegetation potential in all coal regions but would not be a major problem in the Alabama Subregion. In the western coal regions, rainfall patterns are extremely variable, and in some areas rainfall is consistently low. Arid and semiarid lands--particularly in the Green River-Hams Fork, Uinta-Southwestern Utah, and San Juan River regions--have areas with an average annual rainfall of 8 inches or less. Although the amount of water needed to sustain revegetation varies with species requirements, areas receiving less than 10 inches of annual rainfall would require intensive reclamation and revegetation measures. Applying irrigation water, where available, during seeding establishment would help reestablish vegetation in low rainfall areas (see Appendix 5).

Soil conditioning may be required in any of the regions. Included among the most common conditioning techniques are adding fertilizer, mulching, and spreading chemical additives for soil neutralization. Topsoil would be added to overcome specific problems or to provide a proper medium for plant growth. Replacing topsoil or some favorable plant growth material is a regulatory requirement.

The Office of Technology Assessment (OTA) is conducting an assessment of "Technologies for Western Surface Mine Reclamation." OTA released the draft report for review in August 1985 and plans to publish the final report near the end of 1985. The assessment examines the following:

- (1) methods of predicting and evaluating the success of reclamation practices, including an analysis of the kinds and levels of uncertainty;
- (2) status of monitoring and research on mined land reclamation in the western United States and how monitoring and other data (academic research, state and federal data bases) are being used to support reclamation;
- (3) encouragement given to the development and use of innovative and emerging reclamation techniques;
- (4) relation between preleasing and postleasing technology or methodology requirements for environmental protection, including an evaluation of the fate of lease stipulations intended to implement the environmental protection requirement of the federal coal leasing program; and

SOILS AND VEGETATION

(5) technical and policy options for improving the prospects for successful reclamation on western federal land, including research and development work (Robison 1984).

Planned reclamation and revegetation of land disturbed by surface mining would be difficult in the coal regions in the West. But planned reclamation is expected generally to be successful throughout the six coal regions with disturbed land being reclaimed in stages concurrently with mining and the intensive use of effective erosion control, reclamation, and revegetation measures tailored to existing conditions. A strong compliance program and effective monitoring and maintenance programs, however, are also needed to ensure timely and effective action and proper follow-up. See Appendix 5 for a discussion of reclamation concerns, experiences, and success.

The goals of reclamation are now broader than ever. Regulations call for returning the land to the approximate original contour and establishing a cover of perennial, diverse vegetation that will support the proposed postmining land use. Research and monitoring of specific sites have found that current reclamation objectives can be met when the reclamation effort is designed and followed on the basis of site-specific needs and when existing technology is used (Narten and others 1983).

Soils. Surface mining would (1) remove favorable plant growth materials (surface soils) and overburden, (2) stockpile these materials, (3) remove the coal, (4) replace the overburden, (5) bury any toxic materials (6) regrade the surface and (7) replace topsoil or other favorable plant growth material. During stripping and stockpiling, the natural (genetic) soil profile, including soil horizons, structure, and horizon arrangement, would be completely altered and mixed except for the topsoil and subsoil. The saving of topsoil and favorable plant growth materials for use in reclamation, however, would increase the productivity potential of mined lands. Overburden removal would also bring to the surface unfavorable plant growth material and in some cases toxic materials. During surface mining, soils and soil materials would be exposed to wind and water erosion. Surface mining could harm soils in differing ways, ranging from minor short-term disturbances to a significant long-term reduction in productive capacity.

The impact to soils would depend on the effectiveness of restoring soil productivity. The parts of Section 406(a) and Section 508(a)(s) of SMCRA that pertain to topsoil handling and soil restoration provide for reducing potentially adverse soil impacts caused by a lack of topsoil stockpiling and improper replacement, overburden handling, and soil reconstruction. The preconstruction natural (genetic) soil profile cannot be completely restored, but soil productivity is expected to be reclaimed to preconstruction levels and in some cases enhanced if an intensive soil reconstruction and reclamation program is followed (McCormack 1974, 1976). Where unfavorable soil material (strongly alkaline or saline) that originally was on the surface can be replaced by more suitable soil material, productivity should improve. At the least, reclamation would ensure that cover is reestablished over the disturbed areas. Some small localized areas would require continued follow-up to ensure adequate erosion control and revegetation. (See Appendix 5 for a more detailed discussion.)

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

The reclamation plan for a particular leasehold must include detailed soil surveys provided by the lessee. Such surveys describe physical and chemical characteristics and the geographic extent of leasehold soils to provide the basis for an effective reclamation plan.

A major soil reconstruction concern is whether an area has enough suitable plant growth material to cover the regraded surface mine area. Where mines occur in dominantly shallow and moderately deep soils, suitable plant growth materials must be carefully selected and stored. Most areas of extensive coal have enough suitable plant growth materials, but availability of suitable materials would depend on site-specific conditions for surface mining.

Soils would mostly be disturbed for short periods. Facility sites for both surface and subsurface mining would remove acres from production for long periods (project life). Enforcement and compliance with regulations and use of effective erosion control and reclamation measures would preclude significant soil erosion and reduction in soil productivity.

In surface mined areas, even though efforts would be made to return land surfaces to near-original contours, some changes in topography and aspect would occur, changing microclimates and strongly affecting plant communities. A significant adverse impact would involve preconstruction plant density needing specialized microenvironments, which could not be reestablished on the reclaimed areas. Shrubs and trees would be most significantly affected. The loss of the natural intricate vegetation diversity due to changes in soils, topography, and microclimate would not reduce production but would change the area's suitability for wildlife habitat and change the area's aesthetic value. The effect on vegetation diversity would not be extensive but localized, occurring mainly in foothills, mountains, and wooded draws.

Vegetation. The success of revegetation depends on how well soil productivity is restored and on how well proposed reclamation and revegetation programs are implemented. Revegetation potential would be the greatest in areas of higher precipitation. Grasses and forbs are expected to be adequately established within 5 years after seeding. In zones with precipitation of less than 10 inches, the revegetation time is more likely to exceed 5 years. But with more intensive use of effective seedbed preparation, planting techniques, adapted species, and soil protection, a cover of grasses and forbs could be established to stabilize the land.

Density of the cover and overall plant productivity would vary with climatic conditions. Reclaimed areas having 10 inches or less precipitation and a high evaporation rate would support less vegetation, just as they did before mining. See Appendix 5 for more detailed discussion on revegetation.

Threatened and Endangered Plants. As described in the Affected Environment section and identified in Appendix 3, threatened or endangered plant species occur within some of the federal coal regions. Any type of development and related population increases would threaten these species. Direct impacts and surface disturbance would not be as likely to pose a threat as would the greater human use of areas.

AGRICULTURE

Section 7, Consultation Procedures, of the Endangered Species Act would require a survey before any land disturbance for all federally approved projects. If a species is expected to be affected, measures would be developed to protect that species. The coal unsuitability criteria (Appendix 1) would identify and protect potential threatened or endangered species.

AGRICULTURE

AFFECTED ENVIRONMENT

The six coal regions lie within six land resource regions (LRRs), described by the Soil Conservation Service (SCS 1981). Map 4-2 shows the locations of LRRs and MLRAs within each region. The five western coal regions lie within the following four LRRs.

D--Western Range and Irrigated Region. Much of the land in this semidesert region of plateaus, plains, and isolated mountain ranges is used for range, but small areas of irrigated cropland lie along streams. The main crops consist of feed for livestock.

E--Rocky Mountain Range and Forest Region. Rugged mountains are the dominant features of this region, which also has some broad valleys and remnants of high plateaus. Grazing is the leading land use in the valleys and mountains, and lumbering occurs in some of the forested mountains. Recreation is important throughout this region. Irrigated crops are grown in some valleys, and dry farming occurs in others. Some orchards also occur where the climate is favorable.

F--Northern Great Plains Spring Wheat Region. The fertile soils and dominantly level topography of this region are favorable for farming, but the low precipitation and a short growing season limit the crops that can be grown. Dry-farmed spring wheat is the major crop. Corn, flax, and sugar beets are irrigated crops.

G--Western Great Plains Range and Irrigated Region. This section of the Great Plains consists of a rolling upland whose soils are underlain by shale, siltstone, sandstone, and (locally) thick alluvium. Most of this region is in rangeland, but some wheat is dry-farmed, and feed grain for livestock is the main irrigated crop. Potatoes, sugar beets, and corn are important locally.

The Alabama Subregion lies within in the following two LRRs:

N--East and Central Farming and Forest Region. This borderland region between the north and south includes the Appalachian Mountains, valleys, and dissected plateaus. Small general farms occur throughout, and much of this region is in forests.

P--South Atlantic and Gulf Slope Cash Crop, Forest, and Livestock Region. This region consists of the gently sloping to rolling southern piedmont and the upper coastal plains. Forests make up the major land use.

See the Soils and Vegetation section for descriptions of settings by MLRAs.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Fort Union Region

Most of the north and east parts of the Fort Union Region (MLRAs 53A, 53B, and 54) are in farms and ranches. About half to two-thirds of these areas are dry-farmed with spring wheat, flax, oats, barley, and alfalfa. Some small areas along rivers and major drainageways are irrigated with alfalfa, corn, and small grains. Wheat farms tend to be large, averaging over 1,000 acres. The more sloping areas are in native range and used for livestock grazing. More than 85 percent of the south and west parts of this region (MLRAs 58A and 58C) are in native grasses and shrubs grazed by cattle and sheep. Forage production on native rangelands varies from 6 to 18 acres per animal unit month (AUM). Cow-calf operations are the main livestock enterprise. The rest of this area is mainly dry-farmed in wheat. Narrow strips of land along rivers and major tributaries are irrigated for sugar beets, alfalfa, other hay crops, and corn for silage.

Cash-grain and livestock farms predominate in the north and east parts of the region, whereas livestock operations predominate elsewhere. Prime farmlands occur on alluvial valley floors, but no such lands occur in federal leasing areas.

Powder River Region

Nearly 80 percent of this region is in native grasses and shrubs grazed by cattle and sheep. The more gently sloping areas of deeper soils, which make up about 5 percent of the region are dry-farmed to wheat. Narrow strips of land along rivers and their larger tributaries are irrigated for alfalfa, other hay crops, feed grains, sugar beets, and corn for silage. Some of the land is used for pasture. The upper slopes and tops of some of the higher buttes and foothills consist of open woodland.

The cattle industry is important to this region. Ranches are large, averaging over 7,000 acres in Campbell and Converse counties, Wyoming. Most of these ranches are self-contained, but on some ranches cattle and sheep are moved from their base ranges to summer ranges on public lands. Most ranches use some state or federally owned surface rights. Forage production on native rangelands varies from 10 to 24 acres per animal unit month (AUM).

Green River-Hams Fork Region

Most of this region is used for cattle and sheep grazing, and 2 to 5 percent of the region, mostly along the large streams, is irrigated, mainly for livestock forage. Some small grains, mainly winter wheat, are grown in areas of higher precipitation on mesas and foothill slopes.

In much of the region, especially in areas of low precipitation (MLRA 37), grazing lands are sparsely vegetated with grasses and shrubs and are moderately low in production. Forage production ranges from 10 to 24 acres per AUM.

AGRICULTURE

Uinta-Southwestern Utah Region

About 80 percent of this region is rangeland grazed by sheep and cattle. The small area of cropland (1 to 5 percent) is irrigated and occurs mainly along the floodplains of major streams. Alfalfa, small grains, and corn are the main crops. Eight percent of the region supports juniper and pinyon-juniper woodland. Some orchards occur in the Grand Junction area.

The grazing lands in much of this region (MLRAs 34 and 35) are sparsely vegetated and have low forage production (10 to 22 acres per AUM) due to low precipitation.

San Juan River Region

The largest portion of the San Juan River Region consists of native rangeland used for cattle and sheep grazing. Five percent of the area is cropland. Irrigated cropland occurs along rivers and major tributaries, where alfalfa, hay, and small grains are grown for livestock feed. Some dry-farmed cropland is also used to grow small grains and hay. Forage production on native rangelands varies from 10 to 30 acres per AUM.

Alabama Subregion

About 82 percent of the land cover in the Alabama Subregion consists of forest. Agriculture occurs on small areas (averaging less than 160 acres) in 14 percent of the subregion, and only a small area near existing mines is farmed. The major crops are cotton, soybeans, corn, wheat, and hay. Pastures are used mostly for beef cattle, some dairy cattle, and hogs. Controlling soil erosion is the major management concern.

IMPACTS

The adoption of any of the program alternatives would affect agriculture. Surface mining, subsurface mining, and coal beneficiation would require the use of agricultural lands. Without knowing the specific agricultural lands that might be disrupted by coal development, this agricultural impact can only be generally discussed. (See the Employment Opportunities discussion of General Impacts in the Socioeconomic section of Chapter 4 for a discussion of impacts on agricultural employment.)

Table 4-13 shows projected land disturbance from coal mining by alternative and region, and Table 4-14 shows the percentage of land disturbance by land cover. Most land disturbance would be short term. Completed and ongoing research has found that agricultural productivity (cropland and rangeland) of mined land would be restored. (See Appendix 5 and the Reclamation Potential and Effectiveness discussion in the Soils and Vegetation section of Chapter 4.)

The short-term losses of cropland production and rangeland forage would not significantly reduce regional agricultural production. Individual farmers and ranchers, however, could be severely affected, depending on the actual location of mines. Impacts on directly affected farmers and ranchers would be

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-14
PERCENT LAND DISTURBANCE BY LAND COVER*

Coal Region	Cropland**	Range	Woodland	Wetland
Fort Union	49	42	4	5
Powder River	6	90	2	2
Green River-Hams Fork	6	85	8	1
Uinta-Southwestern Utah	5	78	17	0
San Juan River	4	81	15	0
Alabama Subregion	18	--	78	4

Source: Regional Coal EISs, supplemented by SCS 1981 and Conservation Needs Inventories, conducted by the Soil Conservation Service.

*Estimated percentage of land uses allocated are for areas within coal regions where the coal resource occurs and only for the land use identified.

**Cropland includes lands used as pasture (hay and grazing).

mitigated to the extent that ranchers and farmers are compensated for their losses. Compensation from rental, bonus, royalty, and damage payments on the average would exceed losses in agricultural income. BLM grazing lessees would not be compensated and could be significantly affected when large areas are taken out of production on any one ranch unit an any one time.

The amount of cropland does not necessarily imply a similar amount of prime farmland, which can be determined only after the completion of soil surveys for the prime farmlands designation. Much of the good cropland in the West, including prime farmland, most commonly occurs on alluvial valley floors. Once mining sites are identified and surveyed for prime farmland, specific options for mining would be selected. Impacts on prime farmland would be reduced in compliance with the prime farmland and alluvial valley floor provisions of the Surface Mining Control and Reclamation Act (SMCRA) and the land unsuitability criteria. (See Chapter 1, Major Federal and State Laws Mitigating Coal-Related Impacts.) Section 510(B)(5)(A) of SMCRA provides for protecting alluvial valley floors.

Another potential impact to cropland would be the conversion of cropland to urban uses for coal-related population increases. Land disturbance resulting from population increases cannot be measured because it would occur at unknown levels and locations in response to coal development at undetermined sites. From 0.05 to 0.13 acres per capita would be converted to urban uses (ERS 1970). Less than 2 percent of the cropland is expected to be converted, and conversion would not significantly reduce regional agricultural production.

In the Western coal regions, the dominant postmining land use would not change from livestock and wildlife grazing because of the difficulties of overcoming low annual precipitation. Cropland use is also expected to remain the same.

Areas of dry-farmed and irrigated cropland are expected to be effectively reclaimed (Appendix 5). Some areas with supplemental water would be used as irrigated cropland.

In the Alabama Subregion, forest is expected to be reduced. The closeness of coal areas to population centers would allow an opportunity for increasing land values by establishing recreational facilities and second home communities on reclaimed land.

WILDLIFE

WILDLIFE

AFFECTED ENVIRONMENT

Fort Union Region

The Fort Union Region's mid-tall grass, mid-grass, and mid-short grass prairies (see Vegetation section for a description of these habitats) support about 70 species of mammals, 247 species of birds, 80 species of fish, and 21 species of reptiles and amphibians (BLM 1979a; Stebbins 1966). The region's big-game species include mule deer, whitetail deer, and pronghorn. Small-game animals include the cottontail rabbit, snowshoe hare, and gray and fox squirrels. Many small mammal species serve as prey for larger furbearers and predators. Five important game bird species are also found here: ring-necked pheasant, sage grouse, sharp-tailed grouse, Hungarian partridge, and wild turkey.

A large variety of raptors inhabit or migrate through this prairie area, including the bald and golden eagle, osprey, harrier, prairie falcon, peregrine falcon, and several owl species.

The region's extensive wetlands, occurring mainly as potholes, form part of the main waterfowl-producing area of North America--the Central Flyway. Because most waterfowl raised in the prairie pothole region inhabit Canada, the United States, and Mexico, these birds are of national and international importance. The pothole areas generally lie north of any expected coal development.

The main game fish species in the Fort Union Region's reservoirs and streams include walleye, sauger, northern pike, white bass, yellow perch, largemouth bass, channel catfish, and bullheads. Nongame species include a large variety of shiners, suckers, and minnows.

The U.S. Fish and Wildlife Service (FWS) has developed both national and Region 6 resource plans that identify wildlife "species of special emphasis" in the Fort Union Region. In addition, BLM and FWS have developed a list of "migrating birds of high federal interest" found in the Fort Union Region. These species are too numerous to mention here but will be considered when site-specific plans are submitted.

At least six endangered animal species occur or have been reported in the region: northern kit fox, peregrine falcon, black-footed ferret, whooping crane, bald eagle, and Tule white-fronted goose. Appendix 3 gives the FWS listing of threatened, endangered, or proposed species that could occur in this region.

Powder River Region

The Powder River Region is part of the short-grass prairie, whose sagebrush component is essential to sage grouse and highly important to pronghorn and many groundnesting birds. The region has 70 species of mammals, 247 species of birds, 21 species of reptiles and amphibians, and 80 species of fish (BLM

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

1979a; Stebbins 1966; Burt and Grossenheider 1964; Robbins and others 1966; Wyoming Game and Fish Department 1977). Hunting and wildlife sightseeing are important to this region's economy.

Mule deer and pronghorn are the region's main big-game animals. Existing mines, access roads, railroads, and associated fencing severely restrict deer and antelope movement throughout the region.

Sharp-tailed grouse abound in the Montana part of the region and are common in the northern half of Campbell County, Wyoming. Sage grouse are the most common upland game bird in the Wyoming part and also occur in the Montana part.

Many raptors occur in this area, and many golden eagle nests and prairie falcon eyries exist on or near active mines or areas leased for further development.

FWS has developed both national and Region 6 resource plans that list wildlife "species of special emphasis" in the Powder River Region. In addition, BLM and FWS have developed a list of migrating birds of high federal interest in the Powder River Region. These species are too numerous to mention here but will be considered when site-specific plans are submitted.

The region's federally listed endangered wildlife includes the black-footed ferret, whooping crane, bald eagle, and American peregrine falcon. Some species, though not endangered throughout their range, have remnant populations in danger of being eliminated in local areas. Such populations have prompted some states to develop "rare and endangered" species lists. The Powder River Region has locally sensitive populations of the meadow jumping mouse, burrowing owl, milk snake, wood frog, shovelnose sturgeon, and silvery minnow (Wyoming Game and Fish Department 1977) (see Appendix 3). The State of Wyoming, however, does not have a state endangered species act or an official list of rare and endangered species.

Green River-Hams Fork Region

Four major vegetative (habitat) types occur in this region: sagebrush, saltbush-greasewood, mountain shrub, and conifer (see Soils and Vegetation section for a brief description of these habitat types). The region's habitats support a large variety of wildlife--an estimated 68 species of mammals, 189 species of birds, 22 species of reptiles and amphibians, and 22 species of fish (Colorado Division of Wildlife 1978a,b,c; Wyoming Game and Fish Department 1977). Because of an abundance of mule deer, elk, and pronghorn, this region is noted for its big-game hunting. Smaller numbers of moose and bighorn sheep also inhabit the region. The region's small-game animals include rabbits, sage grouse, and mourning doves. Common small nongame mammals such as mice, moles, shrews, and gophers serve as prey for the region's many predatory mammals and birds. Twenty percent of the world's pronghorn and a major portion of the world's sage grouse occur in this region. In addition, bald eagles congregate in this region during winter, and golden eagles nest and live year round in this region.

Feral horses are concentrated in small areas and are estimated to be increasing at a rate of 15 to 30 percent annually (BLM 1979b).

WILDLIFE

FWS has developed both national and Region 6 resource plans that list wildlife "species of special emphasis" in this region. In addition, BLM and FWS have developed a list of the region's migrating birds of high federal interest. These species are too numerous to mention here but will be considered when site-specific plans are submitted.

In this region, three fish species (Kendall Warm Springs dace, Colorado squawfish, and humpback chub), three bird species (peregrine falcon, bald eagle, and whooping crane), two mammal species (black-footed ferret and Rocky Mountain wolf), one amphibian species (Wyoming toad), and one plant species (North Park phacelia) are federally listed (see Appendix 3). Wyoming, however, does not have state endangered species or an official list of rare and endangered species.

Uinta-Southwestern Utah Region

Because this region has life zones ranging from the Lower Sonoran to the Canadian, it has a large variety of wildlife species. The Utah Division of Wildlife Resources (Dalton and others 1978) and the Colorado Division of Wildlife (1978a,b,c) estimate that this region has 90 species of mammals, 270 species of birds, 26 species of reptiles, 9 species of amphibians, and 25 species of fish.

This region has four vegetative (habitat): montane forest, woodland-brushland, pinyon-juniper, and cold desert (see Soils and Vegetation section for a description of these habitat types).

The region's wildlife, of great economic and recreation importance, consist of 7 big-game species (mule deer, elk, moose, pronghorn, bighorn sheep, black bear, and cougar), 3 small-game mammal species (cottontail rabbit, snowshoe hare, and pine squirrel), 7 upland game bird species (ring-necked pheasant, Gambel's quail, sage grouse, blue grouse, sharp-tailed grouse, chukar, and mourning dove), 27 migratory waterfowl species, 16 furbearer species, 64 nongame mammal species, 28 raptor species, and at least 270 nongame bird species. Game and nongame contribute to an intense public interest in the region's wildlife because they provide many opportunities for hunting, fishing, observation, and scientific study.

This region's range in altitude gives it a wide variety of wildlife habitats, varying from critical big-game winter ranges to sage grouse strutting grounds. Coal mining could disturb some or all of these habitats.

This region is not a high waterfowl production area, but hunters pursue resident and migrant ducks and geese.

Twenty-eight raptor species are known or suspected to inhabit this region. Because of high public interest, special consideration must be given to raptor protection, especially during courting, breeding, and nesting.

Such small mammals as mice, rats, squirrels, shrews, moles, gophers, and bats occur throughout the region. These populations are subject to extreme, short-term fluctuations in numbers due to weather, food supplies, predation, and disease.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Twenty-five fish species inhabit waters in the region. The more common game species include rainbow, cutthroat, brown, and brook trout; channel catfish; and largemouth bass.

FWS has developed both national and Region 6 resource plans that list wildlife "species of special emphasis" in this region. In addition, BLM and FWS have developed a list of the region's migrating birds of high federal interest. These species are too numerous to mention here but will be considered when site-specific plans are submitted.

Eight federally listed endangered or threatened species inhabit the region either year round or seasonally: bald eagle, peregrine falcon, Utah prairie dog, black-footed ferret, whooping crane, Colorado squawfish, humpback chub, and woundfin. The Virgin River spinedace and Virgin River roundtail chub have been recommended for endangered designation. The razorback sucker is on the Colorado endangered list. Additionally, Colorado cites the river otter as endangered, and Utah cites the spotted bat as unique. See Appendix 3.

San Juan River Region

The San Juan River Region consists of three major vegetative (habitat) types: grassland-shrub, pinyon-juniper, and conifer. The region's wildlife include an estimated 100 species of mammals, 116 species of birds, and 63 species of reptiles and amphibians (Burt and Grossenheider 1964; Stebbins 1966; BLM 1979a; Robbins and others 1966).

The region's big-game animals include pronghorn, mule deer, elk, and black bear. Game birds include Gambel's quail, sage grouse, and mourning dove. Common raptors include red-tailed and ferruginous hawks, great horned owls, and long-eared owls.

FWS has developed both national and Region 2 resource plans that list the region's wildlife "species of special emphasis." In addition, BLM and FWS have developed a list of the region's migrating birds of high federal interest. These species are too numerous to mention here but will be considered when site-specific plans are submitted.

The region's federally listed endangered species are bald eagle, whooping crane, peregrine falcon, gray wolf, Gila trout, Colorado squawfish, and Socorro isopod (see Appendix 3). In addition to the federally listed species, the State of New Mexico has its own endangered species law, and species on the state list found in this region are also listed in Appendix 3.

Alabama Subregion

The major wildlife habitat type in this subregion is the southeastern mixed forest. A wide variety of forest and understory vegetation, a good mixture of terrestrial and aquatic habitat types, and an abundant water supply give the subregion all the needed food and cover for a great variety of wildlife: more than 244 species of birds, 48 species of mammals, 85 species of reptiles and amphibians, and 243 species of fish (BLM 1979a; Conant 1975; Robbins and others 1966; Burt and Grossenheider 1964). The subregion's main game species

WILDLIFE

include whitetail deer, black bear, and ruffed grouse. Many nongame birds and mammals also occupy this habitat type. The subregion's rivers and lakes support such game fish as bass, trout, crappie, bluegill, pike, pickerel, muskellunge, and catfish and such nongame fish as carp, shad, chub, shiner, and sculpin.

FWS has developed both national and Region 4 resource plans that list wildlife "species of special emphasis" in the Alabama Subregion. In addition, BLM and FWS have developed a list of the subregion's migrating birds of high federal interest. These species are too numerous to mention here but will be considered when site-specific plans are submitted.

Eight animal species within the Alabama Subregion are listed as endangered under the Endangered Species Act of 1973: the bald eagle, peregrine falcon, Bachman's warbler, red-cockaded woodpecker, Florida panther, gray bat, Indiana bat, and watercress darter.

IMPACTS

General Impacts

Because the specific coal tracts that might be leased are not now known, the exact habitats that would be affected cannot now be determined. Estimated habitat disturbance from coal mining represents less than 1 percent of habitats in the regions, but, depending on location, the percentage of habitat disturbed could be far greater. Mining in crucial wildlife areas might disturb much more than 1 percent of the habitat, depending upon the mine location. Specific and local wildlife impacts cannot be measured at the program level because the locations of tracts on big-game winter ranges, breeding areas, and migration routes are not known. Illegal hunting losses due to coal-related human population increases can be estimated by using techniques developed for FWS (Thomas 1983).

Existing legislation and criteria designate some areas as unsuitable for mining and also protect sensitive habitats, such as endangered species critical habitats, alluvial valley floors, wetlands, national wildlife refuges, national wilderness areas, wilderness study areas, high-priority migratory bird habitats, raptor nests and roosting sites, and habitats for high-interest resident species.

The general impacts common to all coal regions from increased coal development include primary disturbance and destruction of habitat types and wildlife populations. In addition to direct impacts, secondary impacts would result from increased human population growth and changes in plant and animal communities. Disturbances and changes of wildlife habitats next to the mined areas would lessen as the distance from the mine increases, but this area of influence could be up to five times as large as the directly disturbed areas (BLM 1979a). This area of influence varies by species and type of impact.

Many western communities lie in river valleys, particularly where coal occurs, and urbanization converts high-quality wildlife habitats to urban uses. Because these settled areas tend to have crucial or limiting habitat components, such as critical big-game winter ranges or riparian habitats, the habitats rendered unusable by wildlife during the critical period may extend over several times the urbanized area.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Intensified travel in remote areas for exploration and development could harm wintering big-game herds, disturbing breeding behavior and resulting in direct losses of individual animals.

Habitat destruction during site preparation would result in the loss of normal site productivity for wildlife. Vegetation removal would increase erosion and sedimentation, might introduce pollutants into nearby waterways, and would disturb nearby habitats and animals. Wildlife would be adversely affected by the loss of food and cover.

In addition, reclamation of surface mined areas does not always mean that premining wildlife habitat would be restored. For example, browse ranges could be destroyed by mining and reclaimed with grasses because arid conditions make it extremely difficult to reclaim western surface mined areas to browse. Although grass does furnish habitat for wildlife, species reinhabiting the grass habitat would differ from those formerly inhabiting the browse habitat.

The first impacts would be greatest to small burrowing mammals, ground-nesting birds, and less mobile species such as reptiles and amphibians. The rapid population turnover and high reproductive rates of such species, however, would make them likely to be the first to repopulate reclaimed areas, although species diversity could be lower than that before development. Because of their high productive potential, these species do not require a mined-out area to be extensively reclaimed before they can repopulate it. Therefore, reclamation requirements under the Surface Mining Control and Reclamation Act (SMCRA) would be sufficient to restore habitats for small nongame species, and more measures would not be needed.

Although direct mortality of larger, more mobile animals would be rare, loss or disturbance of habitat would result in increased competition for food, cover, and breeding sites, which could reduce these populations over the long term. Wildlife species dependent on seasonal habitats would be harmed by activities that remove or modify these habitats. If coal development reduces habitats that now limit the size of a migratory wildlife population, that population would also be reduced in other habitat areas. Additionally, secondary impacts could be felt by predators, their prey, and other links in the food chain of that species. Coal development would reduce total wildlife habitat and increase crowding and stress on nearby populations. If they exceed a habitat's carrying capacity, these populations would eventually decline to a level equal to or below that carrying capacity.

Wildlife habitats outside an active mining area could be temporarily or permanently disturbed by noise, air, and water emissions from community expansion, increased human activities, and plant and mine operations.

Other secondary impacts of coal development would also harm wildlife. Fences built along rights-of-way or around areas under construction or rehabilitation would restrict the movement of large mammals. More automobile and truck traffic would result in higher numbers of road kills, and coal mining could change migration patterns and grazing movements by changing the amount and quality of forage and water.

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Mining near surface waters would also disturb aquatic life by introducing materials into the water by runoff. This runoff could contain organic and inorganic matter from decayed vegetation and from the soil itself. Runoff could also leach minerals from exposed soils or might carry residues (oil, grease, pesticides) used during construction or present in the soil.

More hunting, fishing, and trapping arising from coal-related human population increases could force state wildlife management agencies to alter their game and fish management strategies by the year 2000. Current game management strategies are generally based on orderly expansion of human populations and are usually placed in strategic plans set in 5-year periods. A large industry (such as coal development) moving into wildlife areas adds people and creates conditions generally not anticipated in the formulation of current strategic plans. Because of unexpected problems caused by coal development, wildlife priorities, direction for operating plans, and budget planning would have to be changed. The following management changes might be required: (1) shortening of hunting seasons, (2) reducing bag limits, and (3) limiting the number of hunters during certain seasons. More restrictive hunting seasons could lead to an increase in illegal and wanton killing.

Another wildlife management strategy that could be adopted would be to increase the wildlife resource base by acquiring and enhancing habitat. Improving access to public lands previously blocked by small parcels of private land would also help mitigate the effects of increased coal-related human populations.

A serious wildlife management impact of coal-related population increases is the increase in domestic dogs allowed to roam free by their owners. Because many coal areas are also in prime wildlife areas, the loss of wild animals through direct killing and harassment by dogs can reach alarming numbers. Data collected by Bowers (1953) in Virginia revealed that free-running uncontrolled dogs killed more deer than were taken legally by hunters during the open season. Thirty-two states listed actual and estimated deer mortality due to feral dogs at over 20,000 animals per year (Denney 1974; Neil, Hoffman, and Gill 1975).

Table 4-13, Average Annual Land Disturbance, estimates the acres of land that would be disturbed under each alternative at each production level. The disturbances and losses of habitat by 1990 would represent less than 1 percent of the total wildlife habitat in each coal region, but this figure could increase to 1.25 percent by 2000. These percentages are assumed to represent the loss of wildlife carrying capacity, and this capacity might be further reduced, depending upon the specific locations of disturbances and habitat losses.

Under No New Federal Leasing, illegal hunting in the Fort Union Region is not expected to increase at the low production level for all three target years. Human populations are expected to slightly increase at the medium and high production levels between 1990 and 1995, but No New Federal Leasing would cause no significant population increases at the medium and high production levels between 1990 and 2000.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

In the Powder River Region, human population increases are expected to increase illegal hunting at all production levels and for all target years and under all alternatives. In the Green River-Hams Fork Region, illegal hunting would decrease for all target years at the low and medium production levels under all three alternatives, but would increase at the high production level for all target years under all alternatives.

In the Uinta-Southwestern Utah Region under No New Federal Leasing, illegal hunting would increase for all target years and at all production levels. Under Preference Right and Emergency Leasing and the Proposed Action in the same region, illegal hunting would (1) increase for all target years at the low production level, (2) increase between 1990 and 1995 at the medium and high production levels, and (3) then decrease between 1995 and 2000 at the medium and high production levels.

In the San Juan River Region, illegal hunting would increase at the low production level for all three alternatives between 1990 and 1995 but then remain constant through the year 2000. At the medium and high production levels under No New Federal Leasing, illegal hunting would decrease between 1990 and 1995, then remain constant to 2000. Under the Proposed Action and Preference Right and Emergency Leasing at the medium and high production levels for all three target years, illegal hunting would increase.

In the Alabama Subregion, poaching would increase under all alternatives, at all production levels, and for all target years.

VISUAL RESOURCES

AFFECTED ENVIRONMENT

The visual resources of an area are based upon a set of physical characteristics that establish a scenic quality as seen by an average viewer. An area's visual resources are determined by how the viewer feels about visible change within the area, the number of viewers, and how distant the viewers are from what is being viewed. The visual resource "sense" of the region is present in an individual's mind, either from first-hand observation of the physical characteristics of landform, vegetation, and visible man-caused change or from an impression created in a person's mind through secondary sources such as movies, reading, or other forms of information gathering.

The purpose of visual resource management is twofold: (1) to be aware of the quality of the visual resource and permit only those types of landscape changes that the public will accept and (2) to reduce the visual impact of development such as coal mining, so that as few changes as reasonable are made to the landscape. These objectives can only be ensured by the greatest coordination between a proposed land use and the existing visual condition of an area to be changed.

Scenic quality and features vary dramatically among and within the six coal regions, reflecting the diversity in landform, vegetation, and influence of man's presence upon the landscape. The actual physical characteristics of the regions can best be described by dividing the landscape into homogeneous units

VISUAL RESOURCES

termed physiographic provinces (Fenneman 1931). The provinces include an extensive portion of the landscape that portrays similar qualities of soil, rock, slope, and vegetation of the same geomorphic origin. Therefore, visual characteristics of these provinces tend to be repetitive and act as a basis for defining scenic quality for impact prediction.

The six coal regions mainly lie within seven of these physiographic provinces: Great Plains, Colorado Plateaus, Wyoming Basin, Southern Rocky Mountains, Basin and Range, Appalachian, and Coastal Plain. The western five regions represent areas of diverse landform, typified by a contrast in open desert and plain and highlighted by dramatic relief of severely eroded mountain ranges and plateaus. Vegetation is low-growing and sparse except in isolated growths of conifer and hardwoods, and views are open and unrestricted by landform or vegetation. The character of these regions tends to be natural appearing, with interspersed signs of mineral and energy development (including surface mining); ranching; and associated highways, roads, utility systems, and rural communities.

The Alabama Subregion, in contrast, has an older landscape of less diverse features, containing narrow ridgetops, steep slopes, and narrow hollows with nearly level bottomlands. Vegetation consists of southern pines, upland hardwoods, and croplands. The three-county area is basically rural, with the city of Tuscaloosa and the towns of Jasper and Fayette. Views tend to be more limited and enclosed by hilly terrain covered by continuous vegetation patterns, except in the more open plains and crop-covered areas. Human activities have greatly changed the natural character of the landscape, resulting in extensive, visible evidence of coal mining; rural residences; and communities, utilities, roads, and farming.

The scenic quality throughout the six coal regions is defined by features that are fairly common to the physiographic province in which they occur. Occasional and isolated outstanding landscape features are scattered throughout all regions, especially in the southwestern regions where many national parks and monuments occupy diverse landscapes. Visual sensitivity, or how a landscape is viewed, tends to be a mixture of medium to low viewer sensitivity, especially in coal mining areas where the viewers are more accustomed to the evidence of mining. Within all regions are interstate and other highways and communities of high viewer sensitivity toward landscape changes.

IMPACTS

General Impacts

The visual resources of the coal regions could undergo several types of generalized impacts. Impacts could result from surface and underground mining or from new infrastructures being built to support mining. The type and degree of visual impact would depend upon site-specific considerations, including the region involved, the type of landform and vegetation, and the visual sensitivity of the viewing public.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Until mining and rehabilitation are complete, surface mining and onsite development could (1) severely modify the landform, (2) visually dominate the landscape, and (3) change the scenic character of the landscape from a natural or near-natural to a man-dominated, industrial setting. Although surface mining might interest some viewers, other viewers would consider it an unacceptable visual intrusion.

Subsurface mining would be less obvious than surface mining. Generally, the only disturbance would involve mine facilities, which often could be placed away from sensitive or highly scenic areas to maintain the natural-appearing landscape or blend in with existing development. Visual impacts would be similar through all mining years. New portals and such facilities as conveyors, buildings, access roads, and transmission lines, however, if not carefully placed, could degrade an area's visual character. If carefully placed away from sensitive or highly scenic areas, the facilities might not be obvious intrusions.

Other landscape intrusions would result from the building of offsite support services, such as access roads, rail spurs, power lines, pipelines, and other types of urban and infrastructure development and expansion. Such expansion could well involve highly sensitive viewing areas near communities or along heavily traveled highways, causing a higher degree of visual impact. Regions that would undergo large population growth would require many new services and facilities, including housing. Some if not most of this type of disturbance would not be reclaimed.

If new coal mining occurs near, next to, or as an expansion of existing mines, developments and disturbances would be similar to existing disturbances. The basic elements of form, line, color, and texture would be changed as the landform and vegetation are changed or structures are built.

Mining in new areas would create similar impacts, but these could be more disturbing because the public might more readily notice the changes and would not be conditioned by existing visual intrusions. The greatest visual impacts would occur where areas to be mined are bisected by major transportation routes such as heavily traveled interstate systems or major state and federal highways. Mining near communities or near national parks would also greatly disturb visual resources. Because visual resource impacts are closely related to surface disturbance, Table 4-13, Average Annual Land Disturbance, provides a general idea of the amount of visual disturbance. No additional impacts would occur in Alabama under any of the leasing alternatives or the Proposed Action.

No New Federal Leasing

More significant impairment of the visual resources of the regions could occur under No New Federal Leasing. Growth and development might continue within the regions, and visible impacts similar to those already evident would persist. The visual character of the regional landscape would most likely remain, although the extent of development and visible impacts could expand within the regions, depending upon where new mining occurs. Specific locations cannot be predicted.

VISUAL RESOURCES

Preference Right and Emergency Leasing

No additional significant impacts to the visual resources of the regions are expected under this alternative. Little more land disturbance is expected in any region, and some areas might undergo less than average disturbance in some years and at some production levels. Visible disturbance could occur in a few new areas because preference right leases would generally involve new mines. One cannot now predict the locations of these new mines and disturbances. Most disturbance under emergency leasing would occur in old mining areas and would probably not affect an area's visual quality. More disturbances would occur as a result of infrastructure expansion to serve expected population growth, but affected areas cannot now be determined to enable the prediction of impact locations and significance.

The visual character of the regions would most likely persist. The increased modification of landforms, changes in vegetation, and addition of structures would remain visually consistent with existing development within the regions. The amount of visual resource impacts can generally be correlated to the amount of land disturbed, as shown in Table 4-13, Average Annual Land Disturbance.

Fort Union Region. Preference Right and Emergency Leasing would have no more visual resource impacts on this region than are expected under No New Federal Leasing.

Powder River Region. The only change in acreage disturbed under this alternative as compared to No New Federal Leasing would be a decrease at some production levels and in some years. For 1995, decreases of 90 acres at the low production level, 108 acres at the medium production level, and 126 acres at the high production level are expected. For the year 2000, a decrease of 72 acres would occur at the medium production level. The decreased acres disturbed would benefit visual resources, but not noticeably given the 5,901 acres disturbed under the baseline.

Green River-Hams Fork Region. The only decrease in visual resources disturbed under Preference Right and Emergency Leasing would be 5 fewer acres disturbed at the year 1990 low production level than would be disturbed under No New Federal Leasing. Although the same acreage would be disturbed at three production levels under the two alternatives, the following additional disturbance would result under Preference Right and Emergency Leasing: 64 acres at the 1990 medium and high production levels, 412 acres at the 1995 high production level, 75 acres at the medium production level in 2000, and 730 acres at the high production level in 2000.

Uinta-Southwestern Utah Region. Only insignificant visual resource changes would occur in this region. In 1990 under Preference Right and Emergency Leasing, 11 more acres would be disturbed at the medium production level and 5 more acres would be disturbed at the high production level than under No New Federal Leasing. At the 1995 low, medium, and high production levels, only 38, 49, and 32 more acres respectively would be disturbed than under No New Federal Leasing. In the year 2000, land disturbance would insignificantly increase over No New Federal Leasing by 16, 21, and 11 acres at the low, medium, and high production levels respectively.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

San Juan River Region. As in the other regions, Preference Right and Emergency Leasing would not significantly affect visual resources. At the high production level in 1990, 41 fewer acres would be disturbed than under No New Federal Leasing. At the year 1995 low and medium production levels, 82 fewer acres would be disturbed at each level than under No New Federal Leasing. Production at the other levels would result in the same amount of disturbance as under No New Federal Leasing.

Alabama Subregion. Visual resource impacts under Preference Right and Emergency Leasing in the Alabama Subregion would be the same as under No New Federal Leasing.

Proposed Action

Generally, no significant visual resources impacts are expected under the Proposed Action, except in the following descriptions for each region. Any new visual disturbances would be similar to existing conditions.

The visual character of the regions would most likely remain the same. The increased modification of landforms, changes in vegetation, and the addition of structures would remain consistent with existing development. In some cases, impacts would be reduced in that fewer acres would be disturbed under the Proposed Action. Visual resources would thus improve relative to the baseline.

More disturbance would occur as a result of infrastructure expansion to serve expected population growth, but affected areas cannot now be determined to allow impact locations and significance to be predicted.

Fort Union Region. No more visual resource impacts are expected under the Proposed Action than are expected under No New Federal Leasing.

Powder River Region. Most of the Proposed Action impacts for the periods and production levels would benefit visual resources because fewer acres would be disturbed than under No New Federal Leasing. In 1990, disturbance would be the same under all alternatives. In 1995, 145 and 163 fewer acres would be disturbed at the low and medium production levels respectively, and 271 fewer acres would be disturbed at the high production level. In the year 2000, 90 fewer acres would be disturbed at the low production level, 163 fewer acres would be disturbed at the medium production level, and 145 fewer acres would be disturbed at the high production level. The regional landscape character is not likely to be affected under the Proposed Action because of existing mining.

Green River-Hams Fork Region. The Proposed Action would generally disturb visual resources much less than would No New Federal Leasing. Fewer acres would be disturbed at many of the production levels. In 1995, 5 fewer acres would be disturbed in new mine areas at the low and medium production levels, and in the year 2000, 74 fewer acres in new mine areas would be disturbed at the low and medium production levels. All of the fewer disturbed acres would involve surface mining, which would make the impact significantly beneficial. Greater disturbance, however, would occur at other production levels. At the 1990 high production level, 64 more acres would be disturbed, but this amount

RECREATION RESOURCES

would be insignificant. Of significance would be 332 more acres disturbed at the 1995 high production level and the 617 more acres disturbed at the year 2000 high production level.

Uinta-Southwestern Utah Region. The greater acreage that would be disturbed under the Proposed Action would not significantly affect regional visual resources. Only 49, 61, and 88 more acres would be disturbed in new areas at the year 1995 low, medium, and high production levels respectively, and 60, 82, and 133 more acres would be disturbed at the year 2000 low, medium, and high production levels. These acres would be associated with subsurface mining, decreasing the chance for visible disturbance. At two production levels in 1990, fewer acres would be disturbed than under No New Federal Leasing: at the medium production level, 5 fewer acres would be disturbed, and at the high production level, 11 fewer acres would be disturbed.

San Juan River Region. In all cases, the impacts would be fewer than or equal to those under No New Federal Leasing. At the 1990 high production level, 41 fewer acres would be disturbed in new mine areas than under No New Federal Leasing. This disturbance most probably could be absorbed by the regional landscape with little impact. At the 1995 low, medium, and high production level, 82 fewer acres would be disturbed than under No New Federal Leasing. At the year 2000 low and medium production levels, 164 fewer acres would be disturbed than under No New Federal Leasing, as would 124 fewer acres at the year 2000 high production level. In conclusion, the impacts projected for the Proposed Action would not significantly affect visual resources.

Alabama Subregion. The Proposed Action would have the same effects on the Alabama Subregion as would No New Federal Leasing.

RECREATION RESOURCES

AFFECTED ENVIRONMENT

Three types of recreation could be affected by the Proposed Action and alternatives: (1) nonfacility-related activities or extensive recreation, such as backcountry hiking, hunting, or fishing; (2) rural facility-related recreation or intensive recreation, such as camping or picnicking in established areas; and (3) urban recreation, such as recreation center activities, tennis, and swimming.

The high percentage of federal land throughout the five western coal regions opens most of the area to nonfacility-related recreation opportunities. The most popular activities include backpacking, river running, big- and small-game hunting, fishing, winter sports, sightseeing by automobile, camping, and off-road vehicle use (BLM 19831). Because most land in the Alabama Subregion is privately owned, outdoor activities in areas lacking facilities is limited mainly to casual use for hunting (BLM 1983c).

Many outdoor recreation facilities exist in the five western regions in national parks and monuments, national recreation areas, national forests, national wildlife refuges, and state parks and local recreation areas. Also used for public recreation are lakes, rivers, reservoirs, and highly scenic natural areas under all jurisdictions, including private facilities. The

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Alabama Subregion, in contrast, has few public or private recreational facilities (BLM 1983d), but two national forests and a few state parks lie within a few hours' driving distance.

Other types of existing or proposed recreation facilities and experiences in the five western regions include a national system of trails, rivers, and natural landmarks. These designations are a continuing effort by the federal and state governments to formally recognize trails with historic, recreation, or other values; rivers of national, scenic, or recreational significance; and natural landmarks that display unique physical characteristics or relationships that should be preserved for future generations as part of the nation's natural heritage. No such areas, either designated or under study, are believed to be included in the Alabama Subregion.

Most communities in which populations are likely to expand because of an increase in coal mining have some type of urban recreation program and facilities, including community parks and picnic areas. These facilities are provided either by private enterprise or by the municipalities. In the smaller communities, many of which would need to support the increased coal-related populations, these facilities are a focal point for the community through softball and other youth and adult recreation programs.

Urban recreation in larger communities is usually more diversified in types of facilities and in types of organized programs and impromptu activities offered to residents. Some areas have formed recreation districts to fund a broad-based program and keep up with development to meet growing demands. On the other hand, other communities, both large and small, often cannot keep up with demand, creating a shortfall in activities and facilities. Those demands that tend not to be kept up with include picnicking, swimming, tennis, golf, bicycling, hiking, baseball and softball, and municipal park areas. Most communities in all regions rely upon school playgrounds, high school playing fields, fairgrounds, and city and county facilities as major urban public facilities for year-round recreation. In some communities, churches, organizations, and community-sponsored activities also help meet recreation needs (BLM 1983b).

IMPACTS

General Impacts

The main impact on recreation resources resulting from the Proposed Action and alternatives would be the increase in the recreation demand caused by population increases. These increases, beyond normal population growth that would occur without more coal leasing, are expected to occur only at certain production levels in three western coal regions. Population increases could cause overcrowding and overuse of existing facilities and use areas, a decrease in the quality of recreation requiring facilities or solitude, increased administrative costs, and increased vandalism (BLM 1978a). Secondarily, areas disturbed during mining could not be used for recreation until the land is reclaimed, but this impact would generally not be significant.

RECREATION RESOURCES

Under the Proposed Action and Preference Right and Emergency Leasing in the Powder River, Green River-Hams Fork, and San Juan River regions, recreation resources would benefit from lower coal-related population decreases than under No New Federal Leasing. In the Green River-Hams Fork and Uinta-Southwestern Utah regions where coal-related populations would increase at some production levels, the increased demand for recreation facilities and use areas would cause more conflict between private land owners and recreationists. More backcountry hikers, campers, and others engaged in outdoor experiences could reduce the quality of primitive-type recreation on large areas of public lands in the five western coal regions (BLM 1979a). Although Section 522(e) of the Surface Mining Control and Reclamation Act (SMCRA) prohibits new surface mining on certain types of recreation lands or within 300 feet of any public park and provides other such restrictions, these areas could still be harmed by nearby mining or public overuse.

Urban recreation becomes more important as populations increase because social, health, and economic benefits are realized through recreation close to home. Resident demand for urban recreation would increase proportionately to population changes. Demand for many activities would increase at a faster rate than the population (BLM 1983b). Demands would be placed on communities to provide needed urban recreation facilities, programs, and parks. The shortages of some recreation opportunities, however, would not be fulfilled for several years because of a lag in need identification and acquisition or construction. Lack of needed funds for such facilities might be the main roadblock.

Expansion of coal mining could also benefit recreation. Part of the greater tax revenue generated by increased mining and population could be used to help alleviate pressure on existing municipal facilities. Mining could open up new roads and trails to off-road vehicle use (BLM 1978a), and reclamation efforts might increase wildlife habitat and wildlife for hunting and viewing. Where coal-related populations would increase less under the Proposed Action and Preference Right and Emergency Leasing than under No New Federal Leasing, recreation resources would benefit.

The actual extent of impacts to recreation cannot be assessed without first knowing the exact location of future coal mining and where the population increases would occur. Moreover, detailed information on existing recreation resources and present demand would be needed, as would a prediction of the new recreation demands needed by the increased coal-related population. Because much of this information is not known, especially for the local level, impacts can be only generally projected. Percent change in coal-related population between the alternatives and No New Federal Leasing (baseline condition) is used to predict impacts to recreation. For purposes of comparison, population increases under 10 percent are not considered significant.

No New Federal Leasing

No New Federal Leasing would not significantly affect recreation resources. Ongoing growth and development that cause population increases within the regions, however, might continue to expand the demand for recreation facilities and programs. Such demands might or might not be kept up with by public and private sources. As a result, the quality of the recreation experience demanded by users might deteriorate, causing a shift in the type of

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

user or experience sought. Impacts of a continued increase in demand for recreation cannot now be predicted for either urban or rural recreation resources.

Preference Right and Emergency Leasing

This alternative would significantly affect recreation resources at some production levels, but the amount of surface disturbance would generally not affect the recreation resource base of facilities or programs. Most population increases would not create a significant new demand for recreation facilities or areas at most production levels unless the whole increase is placed upon the small population base of a single community. Normally, an increase in demand would be spread over a variety of recreation uses and areas. Population increases or decreases for affected regions are described below. See Table 4-15 for the projected percent change in coal-related population relative to No New Federal Leasing.

Fort Union Region. Impacts to recreation resources would be the same as under No New Federal Leasing.

Powder River Region. The only projected coal-related population increase would amount to about 1 percent at the year 2000 low and high production level but would not significantly affect recreation resources. At all other production levels, coal-related population would decrease from 1 to 2 percent, causing the Preference Right and Emergency Leasing Alternative to benefit recreation resources more than would No New Federal Leasing.

Green River-Hams Fork Region. Few coal-related population increases would occur under this alternative. Population would increase by 9 percent at the medium production level in 2000, which would be the greatest increase but would still be insignificant. Population loss at some production levels, such as a 10 percent reduction at the year 2000 high production level, could result in less use of recreation opportunities.

Uinta-Southwestern Utah Region. Coal-related population would increase significantly at the low, medium, and high production levels in 1995 by 19, 24, and 15 percent respectively. Increases in other years would not significantly affect recreation resources.

San Juan River Region. With populations not expected to increase by more than 6 percent or decrease by more than 4 percent, changes in impacts would be insignificant compared to those under No New Federal Leasing.

Alabama Subregion. Impacts to recreation resources would be the same as under No New Federal Leasing.

Proposed Action

For most regions and at most production levels, the Proposed Action would not significantly affect recreation resources. Impacts that would occur would generally be distributed throughout the regions and would be insignificant. For many regions and at many production levels, coal-related population would be smaller than under No New Federal Leasing, thus benefiting recreation.

RECREATION RESOURCES

TABLE 4-15
PERCENT COAL-RELATED POPULATION CHANGE
FROM NO NEW FEDERAL LEASING

Production Levels	Coal Regions			
	Powder River	Green River- Hams Fork	Uinta- SW Utah	San Juan River
Preference Right and Emergency Leasing				
1990				
Low	- 1	-4	3	-2
Medium	- 2	-2	9	-2
High	- 2	-3	6	-2
1995				
Low	-1	0	19	-4
Medium	-2	1	24	2
High	-1	2	15	0
2000				
Low	1	0	7	1
Medium	-1	9	9	6
High	1	-10	4	0
Proposed Action				
1990				
Low	-2	-4	5	-2
Medium	-2	-4	10	-2
High	-4	-6	11	-4
1995				
Low	-3	-2	27	-7
Medium	-4	-1	33	-7
High	-4	-8	45	-5
2000				
Low	-1	-9	29	-10
Medium	-3	-8	41	-10
High	-1	-35	63	- 7

Note: The Fort Union Region and the Alabama Subregion are not included in this table because no changes from the No New Federal Leasing Alternative would occur under either alternative.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Recreation resources, however, would be significantly affected at all production levels for the years 1995 and 2000 in the Uinta-Southwestern Utah Region.

If coal-related population increases in two or three smaller communities that already have a higher demand for recreation than they can supply by 1990, the impacts could be noticeable. In rural areas, fishing and hunting would be most affected, with an expected lowering of success in each sport. Recreation sites and areas would be degraded because of increased use and vandalism. And the demand for recreation sites and maintenance and operating costs would increase (BLM 1981b).

Population increases or decreases for affected regions are described below. See Table 4-15 for the predicted percent change in coal-related population relative to No New Federal Leasing.

Fort Union Region. Under the Proposed Action, impacts on recreation resources are expected to be similar to those under No New Federal Leasing.

Powder River Region. At all production levels and years, the coal-related population for the region would decrease in relation to No New Federal Leasing, relatively benefitting recreation.

Green River-Hams Fork Region. The coal-related population under the Proposed Action would be less than under No New Federal Leasing at all production levels. In fact, at the high production level coal-related population is expected to be 35 percent less than under No New Federal Leasing by the year 2000. The result would be an eased demand upon recreation resources and opportunities that might already be experiencing excessive demand from other populations within the region under No New Federal Leasing.

Uinta-Southwestern Utah Region. The Proposed Action would place more use pressure on the recreation resource in this region. At all production levels and in all years, the coal-related population would increase over the baseline level. At the year 1990 medium and high production levels and at all production levels for 1995 and 2000, coal-related population would significantly increase (10 percent or more). (See Table 4-15 for coal-related population increases.) Depending on the location of the increase, the significant impacts to recreation might include increased demand for hunting and fishing experiences and a lowering of success in each sport (BLM 1983i).

San Juan River Region. The impacts for this region would be less than those under No New Federal Leasing. In all cases, the expected decrease in coal-related population over the baseline would benefit recreation.

Alabama Subregion. The Proposed Action would affect recreation resources in the Alabama Subregion the same as would No New Federal Leasing.

WILDERNESS

WILDERNESS

AFFECTED ENVIRONMENT

Wilderness concerns within the six coal regions consist of one of two types: (1) officially designated wildernesses under the Wilderness Act of 1964 (Public Law 80-577) and (2) roadless areas being considered for their wilderness values by federal agencies under a number of public laws, agency policies, and court orders. Examples of the areas being considered include BLM wilderness study areas (WSAs) required by the Federal Land Policy and Management Act of 1976 (Public Law 94-579, Sec. 603), and Forest Service areas identified in Roadless Area Review and Evaluation II (RARE II) decisions. RARE II areas are being re-evaluated in ongoing land use plans and EISs as a result of a 1982 Ninth Circuit Court decision (California v. Block). Other wilderness studies are being conducted by the National Park Service and the Fish and Wildlife Service for lands under their jurisdictions.

Many designated wilderness areas and areas being studied for wilderness values lie within the five western coal regions. In a few situations, the areas being considered for wilderness designation overlies coal resources. In Montana, Terry Badlands WSA lies within the Fort Union Region, and Zook Creek and Buffalo Creek WSAs lie within the Powder River Region. In the Uinta-Southwestern Utah Region, WSAs on the Kaiparowitz Plateau and in the Book Cliffs area overlies portions of known coal resources. In the San Juan River Region, coal resources are overlain by portions of Eagle Peak, Mesita Blanca, Ignacio Chavez, and Ah-shi-sle-pah WSAs.

No wilderness resources have been officially designated or are under study within the Alabama Subregion, but the Sipsey and Cheaha wilderness areas lie within a 1- and 3-hour drive respectively of the subregion.

Studies being conducted for BLM WSAs may or may not recommend the WSAs to Congress for wilderness designation. The studies should be completed by 1991, so that any wilderness resources that would conflict with coal development would be known.

Wilderness use and acres of designated wilderness have increased in recent years, and some of the most popular areas, particularly near trailheads, are congested during high-use periods (BLM 1984d).

IMPACTS

General Impacts

New leasing in designated wilderness areas is now prohibited under the Wilderness Act. New leasing in BLM WSAs, Forest Service (RARE II) recommended wilderness areas, further planning areas, and congressionally designated WSAs is effectively prohibited by enactment of a ban of spending money for such leasing in the Interior Department Appropriations Acts for the last several fiscal years, most recently in Section 308 of Public Law 98-473.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Three types of impacts could occur to wilderness areas as a result of mining within the six regions: (1) mining within established wilderness areas or areas under consideration for wilderness designation, (2) adverse changes of outside sights and sounds caused by mining or coal-related activities near wilderness areas, and (3) increased demand for use of wilderness areas by increased coal-related populations.

No direct impacts are expected from mining within designated wildernesses or areas under consideration for wilderness designation. Designated wildernesses are protected under law from new mining, and areas under study for wilderness designation are protected by interim management, which protects wilderness characteristics until a designation determination is made. No impacts would occur in the Alabama Subregion because it has no wilderness areas.

The impacts of outside sights and sounds on wilderness areas are difficult to determine without knowing exactly where future mining would occur. Some impacts might occur, but the type and significance of these impacts cannot be predicted unless specific mining locations and other details are known.

Secondary impacts that could affect designated or potential wilderness areas as a result of increased demand for wilderness resources would affect some of the regions, as described below. A coal-related population increase and a growing awareness of wilderness areas and values would increase the use of and demand for wilderness. On the other hand, as more acres of wilderness are formally designated, formal wilderness capacity would expand, and the needs of more wilderness users would be more easily met in the affected regions. The uncertainty of wilderness designation and lack of knowledge of where populations would grow within a region make it difficult to predict impacts to wilderness resources from increased coal production.

Without knowing where coal mining would occur under the Proposed Action and alternatives, no direct impacts can be discussed. Secondary impacts can generally be determined by looking at the increase, decrease, or lack of change in projected coal-related population. (See Table 4-15 for the predicted change in coal-related populations under No New Federal Leasing for each region.) Specific impacts are described below where population changes of 10 percent or more are expected. A population change of 10 percent or more is considered significant.

No New Federal Leasing

Coal mining would not significantly affect regional wilderness resources under No New Federal Leasing. Continued development of existing federal coal leases could cause more impacts, but the impacts are expected to be slight and similar to existing impacts. Ongoing growth and development within the regions could continue to expand the demand for wilderness use, in some cases lessening the quality of wilderness user experiences. The type of user or the areas used might shift, but new management practices--such as permit systems that spread or limit use--would mostly alleviate the expected impacts.

WILDERNESS

Preference Right and Emergency Leasing

In some regions at certain production levels, this alternative could cause new significant impacts that would not occur under No New Federal Leasing. Coal-related population increases at certain production levels could result in greater demand for wilderness experiences. Where new or existing mining could occur next to a wilderness area, mining could diminish wilderness experiences within the wilderness area by reducing the quality of sights and sounds perceived by the user. As a result of a change in coal-related population, each region except the Fort Union Region and the Alabama Subregion would in some way, however slight, undergo a change in wilderness use or experience.

Fort Union Region. Preference Right and Emergency Leasing would have the same effects on wilderness resources as would No New Federal Leasing.

Powder River Region. The greatest projected coal-related population increase at any production level would be only 1 percent (year 2000, low and high production levels), which would not significantly affect wilderness resources, especially if the population is spread throughout the region. At all other production levels, coal-related population would decrease from 1 to 2 percent. Which would lessen the demand for wilderness.

Green River-Hams Fork Region. Few coal-related population increases would occur under Preference Right and Emergency Leasing. A population increase of 9 percent is expected at the medium production level in 2000, which may result in more use of and demand for wilderness. At other production levels, use demands for wilderness would only insignificantly differ from those under No New Federal Leasing.

Uinta-Southwestern Utah Region. Coal-related populations could increase at all production levels, but population increases at only a few levels would place significant pressure on the wilderness resource. Of greatest concern would be the 19, 24, and 15 percent increases at the 1995 low, medium, and high production levels respectively.

San Juan River Region. Changes in impacts in this region would be insignificant compared to those under No New Federal Leasing. At all production levels, coal-related population would change only slightly if at all.

Alabama Subregion. Preference Right and Emergency Leasing would have the same impacts on wilderness resources as would No New Federal Leasing.

Proposed Action

In most regions and at most production levels, the Proposed Action is not expected to significantly affect wilderness resources. For many regions and at many production levels, a population smaller than that under the No New Federal Leasing is expected, which would result in less demand for wilderness and possible benefits. The wilderness resource, however, would be significantly affected at all production levels for the years 1995 and 2000 in the Uinta-Southwestern Utah Region. In these instances, outside sights and sounds of nearby mining might significantly diminish an area's wilderness character, and wilderness areas might receive heavy user demand.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Fort Union Region. Impacts to the wilderness resource are expected to be the same as under No New Federal Leasing.

Powder River Region. At all of the production levels and target years, the region's coal-related population would decrease in relation to No New Federal Leasing, resulting in a decrease in wilderness demand.

Green River-Hams Fork Region. At all production levels, coal-related population would decline from that of No New Federal Leasing. At the year 2000 low, medium, and high production levels, coal-related population would decline by 9, 8, and 35 percent respectively, resulting in an eased demand for wilderness-related experiences and a possible decrease in visible or audible infringements upon such values.

Uinta-Southwestern Utah Region. Heavy additional significant impacts to wilderness could occur in this region under the Proposed Action. At all production levels in all years, coal-related population would increase over the baseline level. Only at the year 1990 low production level would a insignificant 5 percent increase occur. Depending upon where the population is located within the region, the demand for wilderness opportunities could significantly increase as would the visible and audible adverse effects of mining on wilderness values.

San Juan River Region. The impacts to wilderness resources in this region would decrease at all production levels and in all target years because coal-related population would be less than projected for No New Federal Leasing.

Alabama Subregion. The Proposed Action would have the same impacts as would No New Federal Leasing.

CULTURAL RESOURCES

AFFECTED ENVIRONMENT

The areas that could be affected by the federal coal management program show evidence of human activities from 12,000 years ago to the present. Within this time span, population patterns have fluctuated according to environmental and social changes and have been assigned by prehistorians to several culture periods. Variations, identified by prehistorians as culture areas and cultural traditions, also occur among the areas.

Five broad culture periods are represented among the coal production regions. (Dates for these periods are all approximate.)

1. The Paleo-Indian period occurred from 8,000 to 12,000 years ago. Sites from this period, characterized by bifacially flaked, lanceolate projectile points, have been found throughout the regions.

CULTURAL RESOURCES

2. The Archaic or Desert Culture period occurred from 1,000 to 10,000 years ago. Many campsites representing this period occur throughout the coal regions.
3. The Horticultural period occurred from 800 to 1,200 years ago. It is represented in the Fort Union Region by the Late Prehistoric Culture, in the Uinta-Southwestern Utah Region by the Fremont Culture, in the San Juan River Region by the Anasazi Culture, and in the Alabama Subregion by the Mississippian Culture. In the Fort Union, Powder River, and Green River-Hams Fork Regions, an essentially Archaic lifestyle persisted contemporaneously with the Fremont, Anasazi, Late Prehistoric, and Mississippian developments.
4. The Proto-Historic period occurred in the regions from about A.D. 1200 to 1540, when nomadic hunters from the high plains replaced the horticulturalists of earlier time in the western coal regions. The horse was introduced by the Spanish from Mexico into the western regions in the late 1600s and early 1700s. The Proto-Historic period ended in the regions with Spanish exploration and conquest from the South and English and French exploration and conquest from the east and north.
5. The beginning of the Historic period was marked by the Southwest Coronado expedition in 1540. The founding of the United States on the eastern seaboard in 1776 stimulated the westward expansion of Euro-American activities, including exploration and trapping, agriculture, communications and transportation, and mining.

IMPACTS

General Impacts

The following discussion pertains to all regions, alternatives, and production levels. Increased cultural resource impacts may be roughly correlated to increased surface disturbance. See Table 4-13, Average Annual Land Disturbance, for an idea of cultural resource disturbance by each region, production level, and year. The variation in land disturbance among the alternatives would generally not be great enough to change the significance of impacts to cultural resources. Alternatives whose variation in land disturbance would be great enough to increase the likelihood of impacts are discussed for each region.

Impacts to cultural resources would depend on the particular physical settings and conditions at each site. Because the specifics of each mining operation are unknown, specific impacts cannot be projected.

Mining of leased coal in the regions would cause land changes and probably population increases. Population increases could result in increased off-road vehicle use and other activities, ultimately leading to land changes, vandalism, relic collecting, and disturbance of many identified and some previously unidentified cultural resources within the regions.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Coal mining would affect cultural resources by destroying or changing the resources and the surrounding environment. Mining would displace artifacts and introduce visual, audible, and atmospheric elements out of character with the present environment. These impacts would lessen scientific and cultural information and diminish the resource base for future research. A particular concern for all regions would be the loss of buried sites discovered during dirt moving. Some loss would occur under these discovery conditions even though mining would be immediately stopped. Because cultural resources, once lost, are nonrecoverable, the loss of any information could hamper efforts to understand past cultures or to reconstruct prehistory and history. Values thus may be diminished when removed from original sites.

Impacts by Alternative and Region

No New Federal Leasing. Of the four program alternatives, No New Federal Leasing would most significantly affect cultural resources. Growth and development might continue to expand within the coal regions, and cultural resource impacts similar to those already evident in the regions would persist. The extent of development and site impacts could expand within the regions, depending upon mining locations, which cannot now be predicted.

Preference Right and Emergency Leasing. Preference Right and Emergency Leasing is likely to have the same significant impacts as or fewer significant impacts than No New Federal Leasing.

Proposed Action. The Proposed Action is likely to have the same significant impacts as or fewer significant impacts than No New Federal Leasing.

Fort Union Region. In the Fort Union Region, all alternatives would disturb the same number of acres as would No New Federal Leasing.

Powder River Region. No New Federal Leasing would disturb more acres than the other alternatives, but the greatest difference in disturbance would be only 6 percent less under the Proposed Action at the 1995 high production level.

Green River-Hams Fork Region. No New Federal Leasing would generally disturb more acres than the other alternatives, but at the high production level in 1995, Preference Right and Emergency Leasing would disturb 18 percent more land and the Proposed Action 14 percent more land than would No New Federal Leasing. In the year 2000, Preference Right and Emergency Leasing would disturb 31 percent more land and the Proposed Action 27 percent more land than would No New Federal Leasing.

Uinta-Southwestern Utah Region. In all years and at all production levels, Preference Right and Emergency Leasing would disturb from 3 to 29 percent more land than would No New Federal Leasing, and the Proposed Action would disturb from 7 percent less to 67 percent more land than would No New Federal Leasing.

San Juan River Region. No New Federal Leasing would disturb more land than the other alternatives, but for the Proposed Action this difference in disturbance would only range from 4 to 12 percent.

MINERAL AND PALEONTOLOGICAL RESOURCES

Alabama Subregion. In all years and at all production levels, Preference Right and Emergency Leasing and the Proposed Action would disturb the same amount of land as would No New Federal Leasing.

MINERAL AND PALEONTOLOGICAL RESOURCES

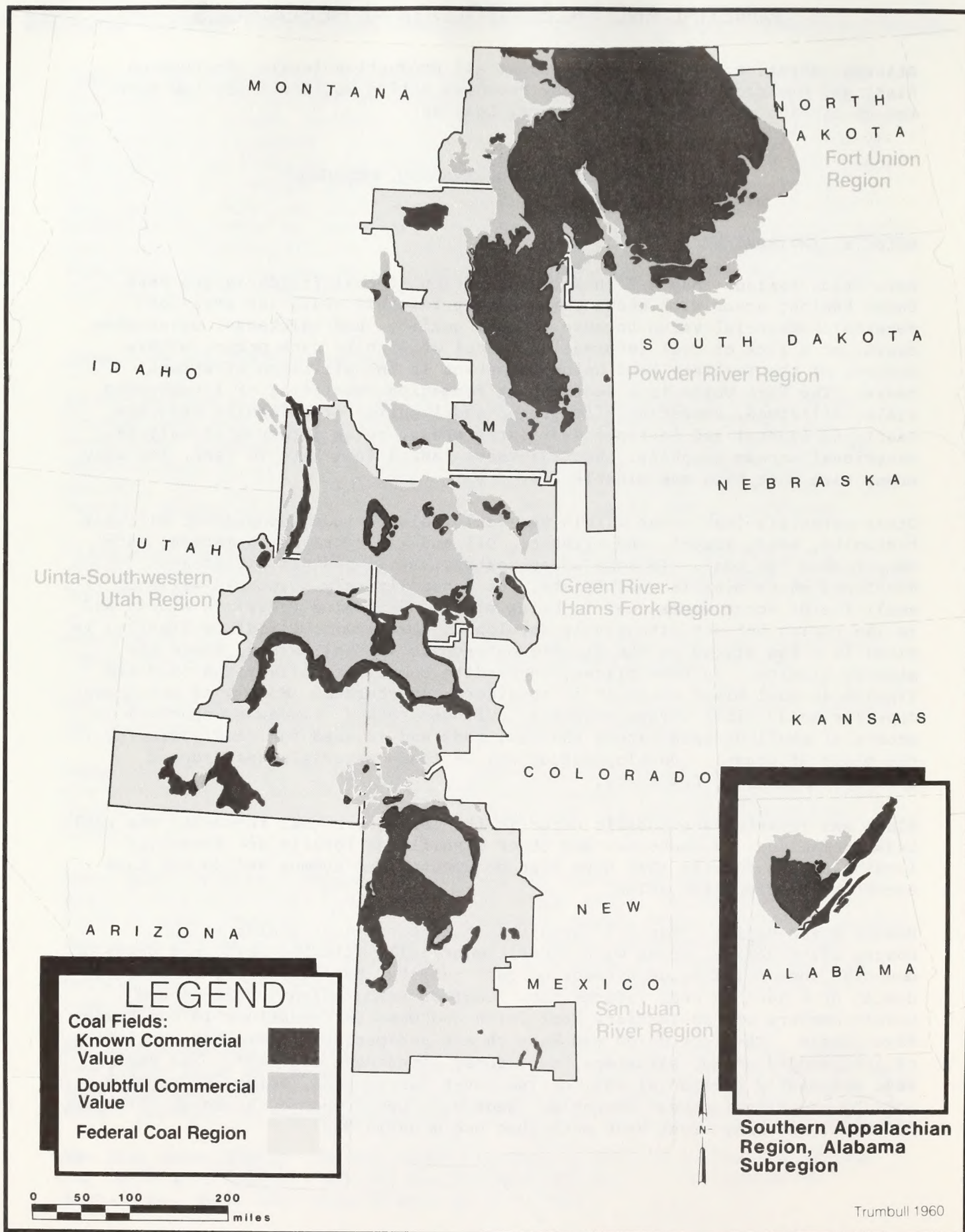
AFFECTED ENVIRONMENT

Fort Union Region. Map 4-3 shows the location of coal fields in the Fort Union Region, areas with known commercially valuable coal, and areas of doubtful commercial value because of coal quality, bed thickness, overburden depth, or a lack of coal information. Coal of lignite rank occurs within members of the Tertiary Fort Union formation in the Williston structural basin. The Fort Union is a sedimentary formation consisting of interbedded shale, siltstone, sandstone, limestone, and lignite. The lignite beds are nearly horizontal and continue over large areas, being interrupted only by occasional stream channels. Bed thickness ranges from 5 to 20 feet, and many areas have more than one minable bed.

Other materials that occur within the coal field include leonardite, oil, gas, bentonite, sand, gravel, and clinker. Oil and gas occur in formations much deeper than the coal. In some areas, extensive oil and gas fields are developed where minable coal exists, but generally only scattered wells or small fields occur where coal is being mined. Bentonite (clay) is widespread in the region but not extensively developed. Leonardite (oxidized lignite) is mined in a few places at the lignite outcrop or in shallow beds above the minable lignite. In some places, leonardite companies collect the oxidized lignite at coal mines where it is considered overburden. Most sand and gravel deposits occur along stream channels. Clinker (baked, clayey overburden) occurs at shallow depths above the coal beds and is used for road surfacing in the place of gravel. Development of all of these materials has dropped sharply in the last few years.

Plant and invertebrate fossils occur in the Tertiary rocks, including the coal beds themselves. Vertebrates and other significant fossils are generally lacking. Most fossils that have been documented are common and do not have exceptional scientific value.

Powder River Region. Map 4-3 shows the location of coal fields in the Powder River Region, areas with known commercially valuable coal, and areas of doubtful commercial value because of coal quality, bed thickness, overburden depth, or a lack of coal information. Coal of subbituminous rank occurs within members of the Tertiary Fort Union and Wasatch formations in the Powder River Basin. The Fort Union and Wasatch are sedimentary formations consisting of interbedded shale, siltstone, sandstone, limestone, and coal. The coal beds are nearly horizontal and continue over large areas, being interrupted only by occasional stream channels. Beds have been reported to be as thick as 200 feet, and many areas have more than one minable bed.



MAP 4-3 COAL FIELDS OF THE FEDERAL COAL REGIONS

MINERAL AND PALEONTOLOGICAL RESOURCES

Other materials that occur within the coal field include oil, gas, bentonite, sand, gravel, and clinker. Oil and gas occur in formations much deeper than the coal. In some areas, extensive oil and gas fields are developed where minable coal exists, but generally only scattered wells or small fields occur where coal is actively being developed. Bentonite is widespread in the region but not extensively developed. Most sand and gravel deposits occur along stream channels. Clinker occurs at shallow depths above the coal beds and is used for road surfacing in the place of gravel. Development of all of these materials has dropped sharply in the last few years.

Plant and invertebrate fossils occur in the Tertiary rocks, including the coal beds. Vertebrates and other significant fossils are generally lacking. Most fossils that have been documented are common and do not have exceptional scientific value.

Green River-Hams Fork Region. Map 4-3 shows the location of coal fields in the Green River-Hams Fork Region, areas with known commercially valuable coal, and areas of doubtful commercial value because of coal quality, bed thickness, overburden depth, or a lack of coal information. Coal of subbituminous, bituminous, and occasionally anthracite rank occur within members of the Cretaceous Mesa Verde Group, Lance Frontier, and Adaville formations, and the Tertiary Fort Union and Wasatch formations. These sedimentary formations consist of interbedded shale, siltstone, sandstone, limestone, and coal. The coal-bearing strata occur in many basins and uplifts, including the overthrust belt of western Wyoming. The minable beds usually occur around the edges of these structural features where they are slightly dipped. These beds become very deep within a relatively short distance. Bed thickness is up to 120 feet, and many areas have more than one minable bed.

Other materials that occur within the coal field include methane gas, oil, gas, bentonite, sand, and gravel. Oil and gas occur in formations much deeper than the coal. In some areas, extensive oil and gas fields are developed where minable coal exists, but generally only scattered wells or small fields occur where coal is actively being developed. Bentonite (clay) is widespread in the region but not extensively developed. Some coal beds have potential for yielding methane gas. Data on the size of this resource is limited, but coal bed methane is being produced at isolated locations in the United States. Most sand and gravel deposits occur along stream channels. Development of all of these materials has dropped sharply in the last few years.

Vertebrate, invertebrate, and plant fossils occur within the upper Cretaceous and Tertiary coal-bearing deposits of the Green River-Hams Fork Region. The region has not been intensively inventoried for paleontological resources, but completed surveys have found significant and highly significant fossils. A significant factor in the geologic setting is the contact point between Cretaceous and Tertiary sediments, which marks the period of transition from dominance of dinosaurs to mammals. The western United States is the main place in the world where this transition is recorded in geologic deposits. As inventories continue, more significant and scientifically important fossils are likely to be discovered.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Uinta-Southwestern Utah Region. Map 4-3 shows the location of coal fields in the Uinta-Southwestern Utah Region, areas with known commercially valuable coal, and areas of doubtful commercial value because of coal quality, bed thickness, overburden depth, or a lack of coal information. Coal of bituminous and subbituminous rank occurs within members of the Cretaceous Ferron, Emery, Straight Cliffs, and Blackhawk formations. These sedimentary formations consist of interbedded shale, siltstone, sandstone, limestone, and coal. The beds are moderately to steeply dipped and are not continuous over large areas. Beds are up to 30 feet thick, and many areas have more than one minable bed.

Other materials that occur within the coal field include methane gas, oil, gas, bentonite, sand, and gravel. Oil and gas occur in formations much deeper than the coal. In some areas, extensive oil and gas fields are developed where minable coal exists, but only scattered wells or small fields generally occur where coal is actively being developed. Bentonite is widespread in the region but not extensively developed. Some coal beds have potential for yielding methane gas. Data on the extent of this resource is limited, but methane is being produced in isolated locations in the western United States. Most sand and gravel deposits occur along stream channels. Development of all these materials has dropped sharply in the last few years.

Vertebrate, invertebrate, and plant fossils occur within the upper Cretaceous and Tertiary coal-bearing deposits of the Uinta-Southwestern Utah Region. The region has not been intensively inventoried for paleontological resources, but completed surveys have found significant and highly significant fossils. A significant factor in the geologic setting is the contact point between the Cretaceous and Tertiary sediments, which is also the period of transition from dominance of dinosaurs to mammals. The western United States is the main place in the world where this transition is recorded in geologic deposits. As inventories continue, more significant and scientifically important fossils are likely to be discovered.

San Juan River Region

Map 4-3 shows the location of coal fields in the San Juan River Region, areas with known commercially valuable coal, and areas of doubtful commercial value because of coal quality, bed thickness, overburden depth, or a lack of coal information. Coal of subbituminous and bituminous rank occurs within members of the Cretaceous Dakota Sandstone, Mesa Verde, Fruitland, and Crevasse Canyon formations. These sedimentary formations consist of interbedded shale, siltstone, sandstone, limestone, and coal. The coal-bearing strata occupy the San Juan structural basin, with dip angles varying from nearly level in the center of the basin to 90 degrees along some of the edges. Beds are up to 40 feet thick, and many areas have more than one minable bed.

Other materials that occur within the coal field include methane gas, oil, gas, bentonite, sand, and gravel. Oil and gas occur in formations much deeper than the coal. In some areas, extensive oil and gas fields are developed where minable coal exists, but generally only scattered wells or small fields occur where coal is actively being developed. Bentonite (clay) is widespread in the region but not extensively developed. Some coal beds have potential

MINERAL AND PALEONTOLOGICAL RESOURCES

for yielding methane gas. Data on the extent of this resource is limited, but coal bed methane is being produced in a few locations in the western United States. Most sand and gravel deposits occur along stream channels. Development of all of these materials has dropped sharply in the last few years.

Vertebrate, invertebrate, and plant fossils occur within the upper Cretaceous and Tertiary coal-bearing deposits of the San Juan River Region. The region has not been intensively inventoried for paleontological resources, but completed surveys have found significant and highly significant fossils. A significant factor in the geologic setting is the contact point between the Cretaceous and Tertiary sediments, which marks the period of transition from dominance of dinosaurs to mammals. The western United States is the main place in the world where this transition is recorded in geologic deposits. As inventories continue, more significant and scientifically important fossils are likely to be discovered.

Alabama Subregion

Map 4-3 shows the location of coal fields in the Alabama Subregion, areas with known commercially valuable coal, and areas of doubtful commercial value because of coal quality, bed thickness, overburden depth, or a lack of coal information. Coal of bituminous rank occurs within members of the Pennsylvanian Pottsville formation. The Pottsville is a sedimentary formation consisting of interbedded shale, siltstone, sandstone, limestone, and coal. The coal-bearing strata occur in the Warrior Basin, are commonly faulted, and have a gentle dip. Beds are up to 75 inches thick, and many areas have more than one minable bed.

Other materials that occur within the coal field include methane gas, oil, gas, sand, and gravel. Oil and gas occur in formations much deeper than the coal. In some areas, extensive oil and gas fields are developed where minable coal exists, but generally only scattered wells or small fields occur where coal is actively being developed. Clay is widespread in the region but not extensively developed. Methane gas occurs in coal beds of this region. Data on the extent of this resource is lacking, but methane is being taken from the Mary Lee coal seam. Most sand and gravel deposits occur along stream channels. Development of all of these materials has dropped sharply in the last few years.

Fossils are generally lacking in the shallow geologic units. Some localized fossiliferous zones occur, but no significant localities are known.

IMPACTS

General Impacts

Mineral Resources. Under all alternatives, the amount of coal mined would increase over existing mining. With present mining technology, generally 85 to 90 percent of a coal deposit is recovered in surface mines and 50 to 60 percent in subsurface mines. In some instances, unrecovered coal would be lost for future use.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Coal in all of the regions is interspersed between private and federal ownership. Federal ownership varies from 36 percent in the Fort Union Region to 87 percent in the Uinta-Southwestern Utah Region (BLM 1979a). Under No New Federal Leasing, a checkerboard ownership pattern would mean that mining would have to bypass federal coal and coal mining would thus be more expensive. As mining progresses, unleased federal coal in the mining path would have to be passed over, in many places creating islands of unmined coal. Under today's economic conditions, returning at a later date to mine this coal would often be uneconomical, and the coal would thus be lost for future use. Moreover, skipping over areas would increase mining costs and thus energy costs for consumers. These impacts would not occur under either the Proposed Action or Preference Right and Emergency Leasing.

A conflict could occur in coal areas where oil and gas are being developed. BLM's policy is usually to allow oil and gas removal to proceed and delay coal development. Where oil and gas development delay the leasing of coal, the conflict would result in delay but not preclusion of coal mining. If in an area of scattered oil and gas wells, it is decided to allow the mining of coal and pumping of oil and gas at the same time, then the coal around the wells would have to be bypassed, and mining of the bypassed coal would probably be precluded because of the priority of the oil and gas.

The removal of overburden and replacing it as spoils would affect the stratigraphy. The depositional environments recorded in this stratigraphy would be disrupted and lost with respect to recording the geologic history. The bearing strength of the spoils would also be lower than that of the original overburden, which would cause some settling for a few years after spoils replacement.

Sand and gravel could be used by the mining industry. Where sand and gravel occur in the path of a mine, they might be used at the mine. Other mineral resources that occur in these regions are developed on a small scale or are in areas where coal development is not likely under any of the alternatives. Underground mining would not significantly affect any other mineral resources.

Paleontological Resources. Where paleontological resources exist, the removal of overburden and coal could disrupt them. Fossils would be damaged or destroyed by mining and the building of haul roads and surface facilities. In addition, mining could disrupt geologic strata in which the fossils occur making the recording of fossil locations difficult or impossible.

New mines, however, operate under rules that require mitigation in the form of surface paleontological inventories and watching for and investigating paleontological resources found during mining. These regulations allow for the study and sampling of paleontological resources that might not normally be studied otherwise. This study would greatly accelerate the rate of paleontological inventory in many areas. Without experienced monitoring, however, most fossils would probably be overlooked or not recognized and would be lost in the spoils.

Population increases within regions and more or upgraded roads would increase access to paleontological sites, which would increase unauthorized collection and vandalism of fossils.

MINERAL AND PALEONTOLOGICAL RESOURCES

Paleontological impacts could be either beneficial or adverse, depending upon what agreement is worked out between the coal industry and the regulatory agency. These impacts would occur under all alternatives for both private and federal coal. The effect would be the same for all levels of coal production, but the scale would increase with increased production.

No New Federal Leasing

Fort Union Region. Federal coal ownership averages about 36 percent (BLM 1979a) in the Fort Union Region. Under No New Federal Leasing, at all production levels this region's mixed ownership pattern would mean that mining would have to bypass federal coal, causing a loss of coal resource, a loss of coal revenues, and an increase in mining costs and perhaps energy costs for consumers.

Oil and gas development occurs in many coal areas within the Fort Union Region in the form of fields and scattered wells. Conflict between coal and oil and gas development may result in some loss of coal but should not cause a significant problem at any level of production.

Because of the limited extent and significance of paleontological resources in the Fort Union Region, impacts on this resource are expected to be insignificant.

Powder River Region. Federal coal ownership averages about 80 percent (BLM 1979a) in the Powder River Region. Under No New Federal Leasing at the low production level, a checkerboard ownership pattern could force mining to bypass federal coal, possibly causing a loss of coal resources and coal revenues and an increase in mining costs and thus energy costs for consumers. With the high percentage of federal coal in this region, this impact would be slight because mining plans could not get started without federal leases.

Oil and gas development occurs in many coal areas within the Powder River Region in the form of fields and scattered wells. Conflicts between coal and oil and gas development might result in some loss of coal but should not cause a significant problem at the low production level.

Because of the limited extent and significance of paleontological resources in the Powder River Region, impacts are expected to be insignificant.

Impacts to mineral and paleontological resources at the medium and high production levels would be similar to those at the low production level. An increase in coal production would increase the likelihood of land ownership conflicts and oil and gas conflicts.

Green River-Hams Fork Region. Federal coal ownership averages about 42 percent (BLM 1979a) in the Green River-Hams Fork Region. Under No New Federal Leasing at the low production level, a checkerboard ownership pattern could force mining to bypass federal coal, causing a loss of coal, loss of coal revenues, and an increase in mining and energy costs for consumers.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Oil and gas development occurs in many coal areas within the Green River-Hams Fork Region in the form of fields and scattered wells. Conflicts between coal and oil and gas development might result in some loss of coal or delay in coal development but should not cause a significant problem at the low level of production.

A potential for conflict exists between coal and methane gas production. Besides the physical aspects of the conflict, the gas cannot be pumped by a coal lessee unless the lessee also has an oil and gas lease. But gas must be vented to safely mine the coal. In the past this conflict has resulted in a loss of methane gas in mining coal. The conflict does not now exist in many coal fields, but it is gaining in significance as industry seems to be getting more interested in recovering methane gas.

Impacts to fossils could be highly significant, but this supplemental EIS cannot assess impacts because of a lack of inventory, a lack of knowledge of mining locations, and a lack of knowledge of detailed mitigation. Because fossils of significant value do occur in coal areas of this region, some fossil locations are likely to be lost and others found during mining. By requiring and closely enforcing mitigation procedures, the losses can be reduced and discoveries increased.

Impacts to mineral and paleontological resources at the medium and high production levels would be similar to those at the low production level. An increase in coal production would increase the likelihood of land ownership, methane gas, oil and gas, and paleontological resource conflicts.

Uinta-Southwestern Utah Region. Federal coal ownership averages about 87 percent (BLM 1979a) in the Uinta-Southwestern Utah Region. Under No New Federal Leasing at the low production level, a checkerboard ownership pattern could force mining to bypass federal coal, possibly causing a loss of coal and coal revenues and increasing mining and energy costs for consumers. With the high percentage of federal coal in this region, this impact would be slight because mining plans could not get started without federal leases.

Oil and gas development occurs in many coal areas within the Uinta-Southwestern Utah Region in the form of fields and scattered wells. Conflict between coal and oil and gas development might result in some loss of coal but should not cause a significant problem at the low level of production.

A potential for conflict exists between coal and methane gas production. Besides the physical aspects of the conflict, the gas cannot be pumped by a coal lessee unless the lessee also has an oil and gas lease. But gas must be vented to safely mine the coal. In the past this conflict has resulted in a loss of methane gas in mining coal. The conflict does not now exist in many coal fields, but it is gaining in significance as industry seems to be getting more interested in recovering methane gas.

Impacts to fossils could be highly significant, but this supplemental EIS cannot assess impacts because of a lack of inventory, a lack of knowledge of mining locations, and a lack of knowledge of detailed mitigation. Because fossils of significant value do occur in coal areas of this region, some fossil locations are likely to be lost and others found during mining. By requiring and closely enforcing mitigation procedures, the losses can be reduced and discoveries increased.

MINERAL AND PALEONTOLOGICAL RESOURCES

Increases in population and more or improved roads would result in better access to paleontological sites, probably increasing unauthorized collection and vandalism.

Impacts to mineral and paleontological resources at the medium and high production levels would be similar to those at the low production level. Increased coal production would increase the likelihood of land ownership, oil and gas, methane gas, and paleontological resource conflicts.

San Juan River Region. Federal coal ownership averages about 80 percent (BLM 1979a) in the San Juan River Region. Under No New Federal Leasing at the low production level, a checkerboard ownership pattern could force mining to bypass federal coal, possibly causing a loss of coal resources and coal revenues and an increase in mining and energy costs for consumers. With the high percentage of federal coal in this region, this impact would be slight because mining plans could not get started without federal leases.

Oil and gas development occurs in many coal areas within the San Juan River Region in the form of fields and scattered wells. Conflict between coal and oil and gas development may result in some loss of coal but should not cause a significant problem at the low level of production.

A potential for conflict exists between coal and methane gas production. Besides the physical aspects of the conflict, the gas cannot be pumped by a coal lessee unless the lessee also has an oil and gas lease. But gas must be vented to safely mine the coal. In the past this conflict has resulted in a loss of methane gas in mining coal. The conflict does not now exist in many coal fields, but it is gaining in significance as industry seems to be getting more interested in recovering methane gas.

Impacts to fossils could be highly significant, but this supplemental EIS cannot assess impacts because of a lack of inventory, a lack of knowledge of mining locations, and a lack of knowledge of detailed mitigation. Because fossils of significant value do occur in coal areas of this region, some fossil locations are likely to be lost and others found during mining. By requiring and closely enforcing mitigation procedures, the losses can be reduced and discoveries increased.

Increases in population and new or improved roads would result in better access to paleontological sites, probably increasing unauthorized collection and vandalism.

Impacts to mineral and paleontological resources at the medium and high production levels would be similar to those at the low production levels. Increased coal production would increase the likelihood of ownership, methane gas, oil and gas, and paleontological resource conflicts.

Alabama Subregion. Federal coal ownership averages about 12 percent (BLM 1979a) in the Alabama Subregion. Under No New Federal Leasing, a checkerboard ownership pattern could force mining to bypass federal coal, possibly causing a loss of coal resources and coal revenues and an increase in mining and energy costs for consumers.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Oil and gas development occurs in coal areas within the Alabama Subregion in the form of fields and scattered wells. Conflict between coal and oil and gas development may result in some loss of coal but should not cause a significant problem at the low level of production.

Methane gas has been lost and probably will continue to be lost in order to mine coal safely. Future technology may allow recovery of the gas to avoid wasting this resource.

Because of the small extent and significance of paleontological resources in the Alabama Subregion, impacts should not be significant.

Impacts to mineral and paleontological resources at the medium and high production levels would be similar to those at the low production levels. Increased coal production would increase the likelihood of ownership, methane gas, and oil and gas conflicts.

Preference Right and Emergency Leasing

Fort Union Region. Impacts to mineral resources under Preference Right and Emergency Leasing would be the same as those under No New Federal Leasing except that emergency leasing would eliminate the bypassing of unleased federal coal. Although this alternative would allow BLM and industry to plan mining areas in the short term and eliminate the loss of bypassed coal, potential mine areas would still tend to be limited to areas with predominantly private or state coal ownership.

Impacts to paleontological resources would be the same as those under No New Federal Leasing.

Powder River Region. Impacts to mineral resources at the low production level would be similar to those under No New Federal Leasing except that emergency leasing would eliminate the bypassing of unleased federal coal. Although Preference Right and Emergency Leasing would allow BLM and industry to plan mining areas in the short term and would eliminate the loss of bypassed coal, potential mine areas would still tend to be limited to areas with predominantly private or state coal ownership.

Impacts at the medium and high production level would be similar to impacts described for the low production level. In 1995 and 2000, these types of impacts would be smaller or spread over a smaller area than under No New Federal Leasing because production would be lower. At the high production level, coal production would be lower than under No New Federal Leasing in 1995 but would be the same in 2000. Impacts would thus decrease for a time and then increase back to their original levels.

Impacts to paleontological resources would be similar to those under No New Federal Leasing.

MINERAL AND PALEONTOLOGICAL RESOURCES

Green River-Hams Fork Region. Impacts to mineral resources at the low production level would be similar to those under No New Federal Leasing except that emergency leasing would eliminate the bypassing of unleased federal coal. Although this alternative would allow BLM and industry to plan mining areas in the short term and would eliminate the loss of bypassed coal, potential mine areas would still tend to be limited to areas with predominantly private or state coal ownership.

Impacts at the medium and high production levels would be similar to impacts described for the low production level. In 1995 and 2000 at the high production level, these types of impacts would be greater and spread over a larger area than under No New Federal leasing because production would be about 8 to 10 percent higher.

Impacts to paleontological resources would be similar to those described for No New Federal Leasing.

Uinta-Southwestern Utah Region. Impacts to mineral resources at the Preference Right and Emergency Leasing low production level would be similar to those under No New Federal Leasing except that emergency leasing would eliminate the impact of bypassing unleased federal coal. Although this alternative would allow BLM and industry to plan mining areas in the short term and would eliminate the loss of bypassed coal, potential mine areas would still tend to be limited to areas with predominantly private or state coal ownership.

Impacts at the medium and high production levels would be similar to those described for the low production level. In 1995 and 2000, at the high production level, these types of impacts would be greater and spread over a larger area than under No New Federal Leasing because production would be from 6 to 18 percent higher.

Impacts to paleontological resources would be similar to those under No New Federal Leasing.

San Juan River Region. Under Preference Right and Emergency Leasing, impacts to mineral resources at the low production level would be similar to those under No New Federal Leasing Alternative except that emergency leasing would eliminate the impact of bypassing unleased federal coal. Although this alternative would allow BLM and industry to plan mining areas in the short term and would eliminate the loss of bypassed coal, potential mine areas would still tend to be limited to areas with predominantly private or state coal ownership.

Impacts at the medium and high production levels would be similar to impacts at the low production level.

Impacts to paleontological resources would be similar to those under No New Federal Leasing.

Alabama Subregion. Impacts to mineral resources at all production levels would be the same as those for No New Federal Leasing except that emergency leasing would eliminate the bypassing of unleased federal coal. Although this alternative allows BLM and industry to plan mining areas in the short term and would eliminate the loss of bypassed coal, potential mine areas would still tend to be limited to areas with predominantly private or state coal ownership.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Impacts to paleontological resources would be the same as those under No New Federal Leasing.

Proposed Action

Fort Union Region. Impacts to mineral resources at the Proposed Action low production level would be the same as those under No New Federal Leasing. A leasing program would allow industry and BLM to plan for future mining and make interspersed federal coal available for lease. The Proposed Action differs from Preference Right and Emergency Leasing in that future mining areas could be planned well in advance of mining. Moreover, the Proposed Action would allow areas of predominantly federal coal, which may contain the more attractive coal resource, to be considered for development along with predominantly private and state coal areas.

Impacts to paleontological resources would be the same as those under No New Federal Leasing.

Powder River Region. Impacts to mineral resources at the low production level would be similar to those under No New Federal Leasing except that unleased federal coal would not be bypassed. A leasing program would allow industry and BLM to plan for future mining and make interspersed federal coal available for lease. The Proposed Action differs from Preference Right and Emergency Leasing in that future mining areas could be planned well in advance of the mining. Moreover, areas of predominantly federal coal, which may contain the more attractive coal resource, can be considered for development along with predominantly private and state coal areas.

Impacts to paleontological resources would be similar to but slightly less than those under No New Federal Leasing.

Impacts to mineral and paleontological resources at medium and high production levels would be similar to impacts at the low production level. In 1995 and 2000 these types of impacts would be smaller or spread over a smaller area than under No New Federal Leasing because production would be lower. At the high production level, coal production would decrease under the Proposed Action in 1995 and 2000. Impacts would thus decrease.

Green River-Hams Fork Region. Impacts to mineral resources at the low production level would be similar to those under No New Federal Leasing except that unleased federal coal would not be bypassed. A leasing program would allow industry and BLM to plan for future mining areas and to make interspersed federal coal available for lease. The Proposed Action differs from Preference Right and Emergency Leasing in that the future mining areas could be planned well in advance of mining. Moreover, the Proposed Action would allow areas of predominantly federal coal, which may contain the more attractive coal resource, to be considered for development along with predominantly private and state coal areas.

Impacts to paleontological resources would be similar to those under No New Federal Leasing.

MINERAL AND PALEONTOLOGICAL RESOURCES

Impacts to mineral and paleontological resources at the medium and high production levels would be similar to impacts at the low production level. In 2000 at the high production level, these types of impacts would be smaller or spread over a smaller area than under No New Federal Leasing because production would be lower.

Uinta-Southwestern Utah Region. Impacts to mineral resources at the low production level would be similar to but greater than those under No New Federal Leasing, but unleased federal coal would not be bypassed. A leasing program would allow industry and BLM to plan for future mining areas and make interspersed federal coal available for lease. The Proposed Action differs from Preference Right and Emergency Leasing in that future mining areas could be planned well in advance of mining. Moreover, the Proposed Action would allow areas of predominantly federal coal, which may contain the attractive coal resource, can be considered for development along with predominantly private and state coal areas.

Impacts to paleontological resources would be similar to but greater than those under No New Federal Leasing.

Impacts to mineral and paleontological resources at medium and high production levels would be similar to impacts at the low production level. In 1995 and 2000 at the high production level, these types of impacts would be greater or spread over a larger area than under No New Federal Leasing because production would be higher.

San Juan River Region. Impacts to mineral resources at the low production level would be similar to but somewhat less than those under No New Federal Leasing except that unleased federal coal would not be bypassed. A leasing program would allow industry and BLM to plan for future mining areas and make interspersed federal coal available for lease. The Proposed Action differs from Preference Right and Emergency Leasing in that future mining areas could be planned well in advance of mining. Moreover, the Proposed Action would allow areas of predominantly federal coal, which may contain the more attractive coal resource, to be considered for development along with predominantly private and state coal areas.

Impacts to paleontological resources would be similar to but lower than those under No New Federal Leasing.

Impacts to mineral and paleontological resources at the medium and high production levels would be similar to impacts at the low production level.

Alabama Subregion. Impacts to mineral resources at all production levels would be the same as those under No New Federal Leasing except that unleased federal coal would not be bypassed. A leasing program would allow industry and BLM to plan for future mining areas and make interspersed federal coal available for lease. The Proposed Action differs from Preference Right and Emergency Leasing in that future mining areas could be planned well in advance of the mining. Moreover, the Proposed Action would allow areas of predominantly federal coal, which may contain the more attractive coal resource, to be considered for development along with predominantly private and state coal areas.

Impacts to paleontological resources would be the same as those under No New Federal Leasing.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

WATER RESOURCES

AFFECTED ENVIRONMENT

Fort Union Region

In the Fort Union Region, annual precipitation ranges from 10 to 18 inches. Most precipitation falls as rain during the spring and early summer. Intense thunderstorms are common in summer, and long periods of low temperatures and occasionally large snowfall are common in winter.

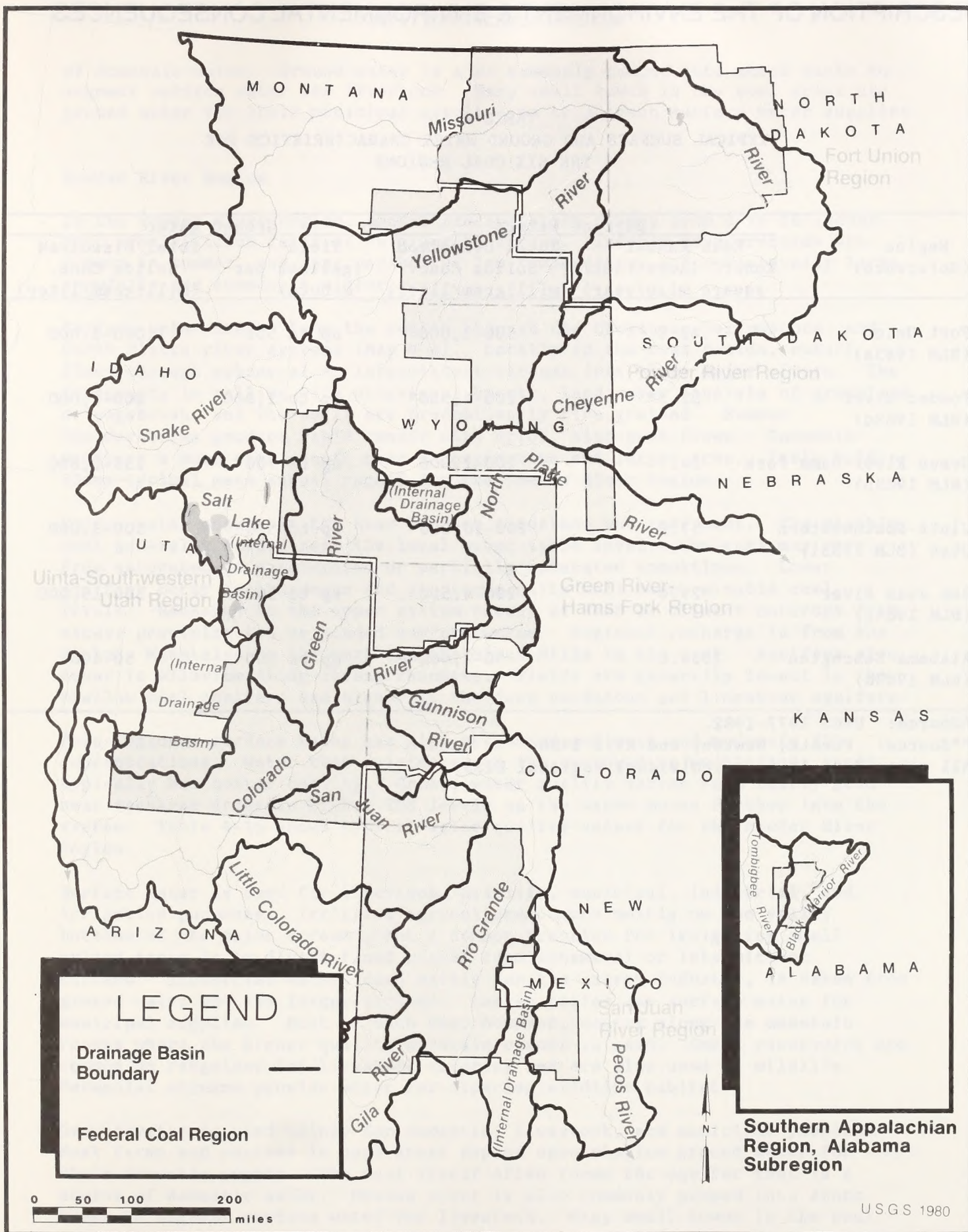
Surface water drains from the region through the Yellowstone and Missouri rivers (Map 4-4). Locally in the coal fields, runoff flows through ephemeral or intermittent streams into these rivers. The topography is rolling with occasional breaks, land cover consists of grassland or dryland crops, and soils are predominantly fine grained. Summer thunderstorms produce rapid runoff with brief, high-peak flows. Snowmelt, on the other hand, produces a more even runoff over a longer time and larger area. Table 4-16 shows typical mean annual runoff for the Fort Union Region.

Ground water occurs in the near-surface sandstone and lignite beds. Movable coal generally occurs near the local water table level. The lignite may vary from saturated to unsaturated or partially saturated conditions over short distances. Lower aquifers occur in sandstone units that are well below movable coal levels. Recharge to this system occurs at outcrops from excess precipitation or ponded surface water. Aquifers also occur in alluvium along stream channels and in buried glacial channels in the northern part of the region. Yields are generally lowest in the shallow lignite aquifers and higher in the deep sandstone and buried glacial channel aquifers.

The region's surface water has low suspended sediment levels and moderate total dissolved solids (TDS) concentrations. Water that passes through the main stem of the Missouri-Yellowstone River system has better quality than other surface waters. Ground water can have high TDS levels, and streams passing through the breaks country have high suspended sediment concentrations. Table 4-16 shows typical water quality values for the Fort Union Region.

Surface water is used for livestock, wildlife, municipal, industrial, and irrigation purposes. The major streams have larger amounts and better quality water than the smaller streams and are used as sources for industry and irrigation. Irrigated agriculture occurs mostly on the valley bottoms of the major streams, but a common practice for irrigating small upland areas is to divert flood runoff from ephemeral or intermittent streams. Industrial water, used mainly for the energy industry, is taken from the larger streams. Larger cities use surface water for municipal supplies. Small reservoirs are common on rangelands for livestock watering and are also used by wildlife. Perennial streams provide water for riparian wildlife habitat.

Ground water is used mainly for domestic, livestock, and municipal purposes. Most farms and ranches in coal areas depend upon ground water for their domestic supply. The lignite itself often forms the aquifer that is a source



MAP 4-4 DRAINAGE BASINS OF THE FEDERAL COAL REGIONS

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-16
TYPICAL SURFACE AND GROUND WATER CHARACTERISTICS FOR
THE SIX COAL REGIONS

Region (Reference)	Surface Water		Ground Water	
	Mean Annual Runoff (Acre-feet/ square mile/year)	Total Dissolved Solids Conc. (milligram/liter)	Yield (gallons per minute)	Total Dissolved Solids Conc. (milligram/liter)
Fort Union (BLM 1983a)	43.9	600-3,000	up to 500	1,000-3,000
Powder River (BLM 1983d)	32.5*	200-4,500*	up to 1,000	800-8,000
Green River-Hams Fork (BLM 1983b)	34.7	200-7,000	up to 700	135-2,800
Uinta-Southwestern Utah (BLM 1983i)	57.0	200-10,000	up to 500	500-3,000
San Juan River (BLM 1984c)	29.0	200-4,500	up to 500	300-15,000
Alabama Subregion (BLM 1983d)	1064.0	60-2,000**	up to 100	50-400

*Source: USGS 1977-1982.

**Source: Puente, Newton, and Hill 1980.

All other data is from individual regional EISS.

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of domestic water. Ground water is also commonly pumped into stock tanks to augment surface water for livestock. Many small towns in the coal areas use ground water for their municipal supplies or to augment surface water supplies.

Powder River Region

In the Powder River Region, annual precipitation ranges from 6 to 16 inches. Most precipitation falls as rain during spring. Intense thunderstorms are common in summer, and long periods of low temperatures and occasionally large snowfalls are common in winter.

Surface water drains from the region through the Cheyenne, Yellowstone, and North Platte river systems (Map 4-4). Locally in the coal fields, runoff flows through ephemeral or intermittent streams into these major rivers. The topography is rolling with occasional breaks, land cover consists of grassland or sagebrush, and the soils are predominantly fine grained. Summer thunderstorms produce rapid runoff with brief, high-peak flows. Snowmelt produces a more even runoff over a longer time and larger area. Table 4-16 shows typical mean annual runoff for the Powder River Region.

Ground water occurs in the near-surface sandstone and coal beds. The minable coal generally occurs near the local water table level. The coal may vary from saturated to unsaturated or partially saturated conditions. Lower aquifers occur in limestone and sandstone units well below minable coal levels. Recharge to the upper system occurs at sand or clinker outcrops from excess precipitation or ponded surface water. Regional recharge is from the Bighorn Mountains to the west and the Black Hills to the east. Aquifers also occur in alluvium along stream channels. Yields are generally lowest in the shallow coal aquifers and higher in the deep sandstone and limestone aquifers.

This region's surface water has high suspended sediment and moderate TDS concentrations. Water that originates in the surrounding mountainous areas typically has better quality. Ground water quality varies from fairly good near recharge areas to higher TDS levels as the water moves further into the system. Table 4-16 shows typical water quality values for the Powder River Region.

Surface water is used for livestock, wildlife, municipal, industrial, and irrigation purposes. Irrigated agriculture occurs mostly on the valley bottoms of the major streams, but a common practice for irrigating small upland areas is to divert flood runoff from ephemeral or intermittent streams. Industrial water, used mainly for the energy industry, is taken from ground water and the larger streams. Larger cities use surface water for municipal supplies. Most of such use, however, occurs along the mountain fronts where the higher quality mountain runoff is used. Small reservoirs are common on rangeland for livestock watering and are also used by wildlife. Perennial streams provide water for riparian wildlife habitat.

Ground water is used mainly for domestic, livestock, and municipal purposes. Most farms and ranches in coal areas depend upon shallow ground water for their domestic supply. The coal itself often forms the aquifer that is a source of domestic water. Ground water is also commonly pumped into stock tanks to augment surface water for livestock. Many small towns in the coal areas use shallow and deep ground water for their municipal supplies or to augment surface water supplies.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Green River-Hams Fork Coal Region

In the Green River-Hams Fork Region, annual precipitation ranges from 6 to 16 inches. Most precipitation falls as snow during winter and early spring. Intense thunderstorms are common in summer, and long periods of low temperatures and occasionally large snowfalls are common in winter.

Surface water drains from the region through the North Platte and Green rivers. The north-central part of the region has internal drainage (Map 4-4). Locally in the coal fields, runoff flows through ephemeral or intermittent streams into these major rivers. The topography is rolling with occasional breaks; land cover consists of grassland or dryland crops, and soils vary from sandy to loam. Summer thunderstorms produce rapid runoff with brief, high-peak flows. Snowmelt, on the other hand, produces a more even runoff over a longer time and larger area. Table 4-16 shows typical mean annual runoff for the Green River-Hams Fork Region.

Much of the minable coal in this region occurs along the upturned edges of the sedimentary basin. At these sites, the sandstone, limestone, and coal beds are dipped at steep angles and receive recharge from excess precipitation or ponded surface waters. This recharge moves until it hits a relatively impermeable rock layer or is intercepted by a surface valley where it may form a seep. These conditions produce a perched ground water situation in the potential coal development areas. Just below this impermeable layer the rocks are dry. Regional ground water systems are deeper.

Aquifers also occur in alluvium along stream channels. Yields are generally lowest in the shallow perched aquifers and higher in the deep aquifers.

This region's surface water has high levels of suspended sediment levels and moderate TDS concentrations. Most of the water that leaves this region originates in the surrounding mountains, and most of the salt load originates within the coal basin. Ground water can have high TDS levels, but it will be lower in perched aquifers and in areas with greater rainfall. Table 4-16 shows typical water quality values for the Green River-Hams Fork Region.

Surface water is used for livestock, wildlife, municipal, industrial, and irrigation purposes. The major streams with larger amounts of water are used as sources for industry and irrigation. Irrigated agriculture occurs mostly on the valley bottoms of the major streams, but a common practice for irrigating small upland areas is to divert flood runoff from ephemeral or intermittent streams. Industrial water, used mainly for the energy industry, is taken from the larger streams. Larger cities use surface water for municipal supplies. Small reservoirs are common in rangeland areas for livestock watering and are also used by wildlife. Perennial streams provide water for riparian wildlife habitat.

Ground water is used mainly for domestic and livestock purposes. Most farms and ranches in coal areas depend upon ground water for their domestic supply. The coal generally is not an important aquifer zone. Ground water is also commonly pumped into stock tanks to augment surface water for livestock.

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Uinta-Southwestern Utah Region

In the Uinta-Southwestern Utah Region, annual precipitation ranges from 8 to 24 inches. Most precipitation falls as rain during the spring and early summer. Intense thunderstorms are common in summer, and periods of low temperatures and occasional snowfalls are common in winter.

Surface water drains from the region through the Green and Colorado rivers. The north-central part has internal drainage (Map 4-4). Locally in the coal fields, runoff flows through ephemeral or intermittent streams into these major rivers. The topography is rolling with occasional breaks; land cover consists of grassland or dryland crops, and the soils are variable from sandy to loam. Summer thunderstorms produce rapid runoff with brief, high-peak flows. Snowmelt, on the other hand, produces a more even runoff over a longer time and larger area. Table 4-16 shows typical mean annual runoff for the Uinta-Southwestern Utah Region.

Ground water occurs in the near-surface sandstone, limestone, and coal beds. Minalbe coal generally occurs near or below the local water table level. The coal may vary from saturated to unsaturated or partially saturated conditions. Recharge to this system occurs at outcrops from excess precipitation or ponded surface water. Aquifers also occur in alluvium along stream channels. Yields are generally lowest in the coal and shale aquifers and higher in the sandstone and limestone aquifers.

The region's surface water has high levels of suspended sediment and high TDS concentrations. Water that passes through the main stem of the Colorado River system often has the worst quality. Ground water can have very high TDS levels. Table 4-16 shows typical water quality values for the Uinta-Southwestern Utah Region.

Surface water is used for livestock, wildlife, municipal, industrial, and irrigation purposes. The major streams have larger amounts of water and are used as sources for industry and irrigation. Irrigated agriculture occurs mostly on the valley bottoms of the major streams and the flanks of the higher country, but a common practice for irrigating small upland areas is to divert flood runoff from ephemeral or intermittent streams. Industrial water, used mainly for the energy industry, is taken from the larger streams. Larger cities use surface water for municipal supplies. Small reservoirs are common in rangeland areas for livestock watering and are also used by wildlife. Perennial streams provide water for riparian wildlife habitat.

Ground water is used mainly for domestic and livestock purposes. Most farms and ranches in coal areas depend upon ground water for their domestic supply. The coal itself may form the aquifer that is a source of domestic water. Ground water is also commonly pumped into stock tanks to augment surface water for livestock. Many small towns in the coal areas use ground water for their municipal supplies or to augment surface water supplies.

San Juan River Region

In the San Juan River Region, annual precipitation ranges from 6 to 14 inches. Most precipitation falls as rain during summer. Intense thunderstorms are common in summer, and periods of low temperatures and occasional snowfalls are common in winter.

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Surface water drains from the region through the San Juan, Rio Grande, and Little Colorado rivers, and the region's north-central part has internal drainage (Map 4-4). Locally in the coal fields, runoff flows through ephemeral or intermittent streams into these major rivers. The topography is rolling with occasional breaks; land cover consists of sagebrush, grassland, and pinyon-juniper; and soils vary from coarse to fine grained. Summer thunderstorms produce rapid runoff with brief, high-peak flows. Snowmelt produces a more even runoff over a longer time and larger area. Table 4-16 shows typical mean annual runoff for the San Juan River Region.

Ground water occurs in the sandstone and coal beds. The coal may vary from saturated to unsaturated or partially saturated conditions. Lower aquifers occur in sandstone units that are well below minable coal. This system is recharged at outcrops from excess precipitation or ponded surface water and discharges to streams and wells in the central part of the basin. Aquifers also occur in alluvium along stream channels. Yields are generally lowest in the coal aquifers and higher in the sandstone aquifers.

The region's surface water has a high level of suspended sediment and high TDS concentrations. Ground water can have high TDS levels. Table 4-16 shows typical water quality values for the San Juan River Region.

Surface water is used for livestock, wildlife, municipal, industrial, and irrigation purposes. The major streams have larger amounts of water and are used as sources for industry and irrigation. Irrigated agriculture occurs mostly on the valley bottoms of the major streams, but a common practice for irrigating small upland areas is to divert flood runoff from ephemeral or intermittent streams. The limited industrial water use involves mainly the energy industry. Larger cities use surface water for municipal supplies. Small reservoirs are common on rangeland for livestock watering and are also used by wildlife. Perennial streams provide water for riparian wildlife habitat.

Ground water is used mainly for domestic, livestock, industrial, and municipal purposes. Most farms and ranches in coal areas depend upon ground water for their domestic supply. The coal itself sometimes forms the aquifer that is a source of domestic water. Ground water is also commonly pumped into stock tanks to augment surface water for livestock. Many small towns in the coal areas use ground water for their municipal supplies or to augment surface water supplies. Ground water is used for industrial purposes mostly at mines.

Alabama Subregion

In the Alabama Subregion, annual precipitation ranges from 52 to 54 inches and falls as rain throughout the year. Large volumes of water can fall during a single storm.

Surface water drains from the region through the Tombigbee and Black Warrior rivers. Locally in the coal fields, runoff flows through intermittent streams into these major rivers. The topography consists of ridgetops with steep slopes down to narrow hollows; land cover consists of forests, grassland, or cropland; and soils are silty to sandy. Summer thunderstorms produce large amounts of runoff with high peak flows. Table 4-16 shows typical mean annual runoff for the Alabama Subregion. Ground water occurs in the near surface

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coal-bearing strata. The minable coal generally occurs near the local water table level. This system is recharged from excess precipitation or ponded surface water. Discharge is to streams and wells.

Water quality is characterized by low suspended sediment, low TDS concentrations, and low alkalinity. In some areas water quality has already been degraded by mining and other human activities. Ground water can have high TDS levels but generally is adequate for domestic use. Table 4-16 shows typical water quality values for the Alabama Subregion.

Surface water is used for municipal and industrial purposes. Many cities use both surface and ground water for municipal supplies.

Ground water is used mainly for domestic and small public and industrial supplies. Aquifers in the Pottsville formation are the main, and in many areas, the only source of ground water. Many towns in the coal areas use ground water for their municipal supplies or to augment surface water supplies.

IMPACTS

General Impacts

Impacts to water resources are summarized from the regional EISs except where noted. These general impacts could occur in all of the coal regions, under all production levels, and as a result of the mining of both private and federal coal. As production levels increase, the nature of impacts would not change, but the impacts would occur over a larger area.

Surface coal development would adversely affect surface water by disrupting local watersheds and withdrawing water for use. During mining, stream channels and watersheds would be disrupted as mine pits are opened. In the disturbed area, runoff would increase, and water quality would be degraded. Suspended sediment and dissolved solids concentrations could be many times their normal predisturbance levels (Ringgen and others 1979). Strip mining regulations, however, require that all surface runoff meet specified water quality standards, and runoff is usually detained in impoundments or contour trenches to satisfy the regulations. Water normally flowing into the mine area would be diverted around the disturbance area.

Detaining water in sedimentation ponds would allow more runoff to evaporate or seep into the ground and result in less runoff leaving the mine area. Detained water would be treated to lower suspended sediment levels but not for total dissolved solids. Water discharged from detention to surface waters outside the mine area would have increased total dissolved solids. Generally these impacts would affect only streams below a mine until they are diluted by larger streamflows from undisturbed areas. The detention structures, designed to accommodate the 10-year, 24-hour precipitation event, can handle runoff only up to their designed capacity. If this runoff is exceeded, sedimentation would also enter the stream below the mine area.

Although increases in total dissolved solids (TDS) from a single mine would be insignificant far downstream, the cumulative influence of more than one mine in a relatively small area of a region could potentially increase TDS in parts of regional streams.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Once the mined area is reclaimed, surface water quality is expected to return to approximate predisturbance conditions. The replaced spoils may at first be more porous than unmined overburden, resulting in some lowering of peak flows. Experience is lacking as to whether such change in flows would be significant.

Ground water disruption from surface mining would begin as overburden and coal are removed. Water wells where the pit is dug would be removed, and in many areas aquifers would be removed. While the pit is open, the mine operator might also have to pump water out of the pit to be able to work. Open pits below the water table level place drawdown stress on adjacent aquifers, lowering water levels in any nearby wells finished at that level and reducing flow from nearby springs draining the aquifer. The distance from an open pit that this drawdown and reduced springflow would occur would depend on the depth of the open pit and the characteristics of the aquifer.

When overburden spoils are returned to the pit, water would resaturate the spoils and form a new aquifer. The new water levels might vary from premining levels but should be similar in depth and gradient. Aquifer yield and storage characteristics would also change but should still be on the same order of magnitude as under premining conditions. Water in wells that are lowered would also return to their approximate premine levels, but springflows might never return to premine conditions. Because the bedding character of the overburden is not replaced in the spoils, new routing would occur that could permanently dry up old springs and start new springs at other locations. The hydrologic characteristics of the resaturated spoils would differ from the premining bedded shale, sandstone, and coal. The significance of the change would depend upon the mining operations and the geohydrology of the area.

The quality of water that recharges the spoil aquifer could be significantly degraded. Overburden previously deeply buried would be brought closer to the surface and to larger amounts of oxygen. The result would be spoil material more soluble in water. Mining would greatly accelerate this oxidation of fine-grained overburden, a natural process. Increases in dissolved solids concentrations of shallow ground water around mines have been reported by investigators in three regions (Groenewold and others 1980--Fort Union; Van Voast and Hedges 1975--Powder River; Colorado School of Mines 1976--Green River-Hams Fork). The amount of change in TDS would vary and cannot be accurately predicted.

In some areas, ground water quality would not significantly change, or a change would be significant but the water could still be used as it was before mining. In other cases TDS greatly exceeding that before mining could preclude or severely degrade the water's suitability for its premining use.

The degraded water from the saturated spoils would continue to flow through the hydrologic system and down gradient to the surrounding undisturbed aquifers. In the surrounding areas the altered water quality would be attenuated by geochemical processes (dispersion, dilution, precipitation, adsorption), but water wells, springs, and streams near the mine might still receive degraded water.

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Because of the relatively small amount of water and its slow movement in the shallow coal area aquifers, these effects would develop slowly and only in and around the immediate mine area. Little is known about the duration of these conditions, but as salts are leached from an area the increased dissolved solids levels should gradually drop. Because movement of water through these systems is typically slow, hundreds or thousands of years might be needed in many areas for water quality to regain premining conditions.

Many rural water wells would be destroyed or degraded, but state and federal laws require that mine operators provide a replacement water supply. Replacement supply options include drilling of deeper wells, relocating wells to adjacent undisturbed areas, or building surface impoundments for runoff retention. Depending on the option chosen and local site conditions, the expense to the water users of operating these replacement supplies may be higher or lower than current operating costs. If deeper wells are installed or dried-up springs are replaced with wells or reservoirs, operation and maintenance costs would increase. But if a water user is hooked up to a treated water system or a well is installed to a better aquifer, the quality and amount of water received by a user might improve.

Underground mining could disturb surface water conditions as a result of subsidence and water use. Subsidence in underground mine workings could result in streams being diverted underground or springs drying up or being formed in new locations. Where these ground water-surface water interactions are significantly altered, streamflow might locally change. On a regional basis, however, no water would be lost; it would just have a different flow routing. Such changes could be significant in the area of a mine but would usually not be significant on a regional scale.

Coal beds minable by underground methods may be aquifers or may occur within or beneath aquifers. As coal is removed, water may be pumped from the open rooms, creating a drawdown on the surrounding aquifer and lowering water levels of wells near the mine. The extent of the lowered water levels would depend upon the aquifer properties, pumping rates, and the layout of the mine. When mining and related water pumping cease, water levels should return to premining conditions. The hydrologic characteristics of the aquifer that previously included the coal bed would change, and the water would move much more freely.

Subsidence during and after mining could create fractures up through aquifers above the mined coal or even to the surface. Subsidence would thus introduce new paths for mixing of water from different aquifers or between surface water and ground water. This intermixing of water can potentially degrade the quality of the fresher water body.

Coal production involves two types of water use--water used at mines in the mining process and water used by coal-related populations. Water used by populations is usually associated with municipal supply areas. Table 4-17 projects both types of water use but does not assess water use by powerplants or other facilities. Most of the water use estimated for this supplemental EIS occurs as a result of coal-related population. Appendix 4, Methodologies, presents the methodology used to derive these numbers.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Water use in the western regions is a controversial issue and is subject to state laws. Many of the major streams cross more than one region and state. For some rivers, the states involved have formed interstate commissions to resolve regional water supply problems. Water appropriation or use will have to conform to local laws.

Another consideration is the future use of coal slurry pipelines to carry coal to markets. No projections exist for how much coal would move by pipeline. Such pipelines are controversial because of the water needed to move coal from the generally dry coal area and competition with railroads. About 729 acre-feet of water would be needed to move a million tons of coal (BLM 1979a). Water may exist for coal slurry pipelines, but a rearrangement of water appropriations in western states may be needed to permit the use of water to carry coal (BLM 1984g; BLM and Woodward Clyde Consultants 1981).

No New Federal Leasing

Fort Union Region. Impacts to water resources at all three production levels in the Fort Union Region would occur most significantly to ground water quality. But because of mitigation required by SMCRA and state and federal surface mining and reclamation laws, changes in surface water sedimentation outside mine boundaries due to surface runoff from the mine would be insignificant. Reduced runoff would be significant only immediately below the sediment detention reservoirs. The mined areas would be too small to significantly affect surface runoff quality on a regional basis.

Many coal beds in the region act as aquifers, and ground water quality could change within and near areas where overburden is removed for coal mining. Where these lignite beds form shallow aquifers, rural residents commonly use them as a water source. Generally, mining would temporarily disrupt this source of supply and draw down water levels in and near surface mines. Over the long term, mining would degrade water quality, but replacement water supplies could be obtained from deeper aquifers unaffected by mining.

Coal-related water use would vary from 791 to 992 acre-feet/year (Table 4-17) and would cause no significant problems in this region.

Powder River Region. Impacts to water resources at the low production level in the Powder River Region would occur most significantly to ground water quality. But because of mitigation required by state and federal strip mining laws, changes in surface water sedimentation outside mine boundaries due to surface runoff from the mine would be insignificant. Reduced runoff would be significant only immediately below the sediment detention reservoirs. The mined areas would be too small to significantly affect surface runoff quality on a regional basis.

Many coal beds in the region act as aquifers, and ground water quality could change within and near areas where overburden is removed for coal mining. Where these coal beds form shallow aquifers, the rural residents commonly use them as a water source. Generally, mining would temporarily disrupt this source of supply and draw down water levels in and near a surface mine. Over the long term, mining would degrade water quality, but replacement water supplies could be obtained from deeper aquifers unaffected by mining. Coal-related water use would vary from 23,230 to 29,190 acre-feet/year (Table 4-17) but would not cause a significant problem in this region.

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TABLE 4-17
COAL-RELATED WATER USE*
(acre-feet/year)

Production Level	No New Federal Leasing No Action			Preference Right and Emergency Leasing**			Proposed Action**		
	Mining	Population	Total	Mining	Population	Total	Mining	Population	Total
Fort Union Region									
1990									
Low	249	542	791	--	--	--	--	--	--
Medium	301	590	891	--	--	--	--	--	--
High	301	590	891	--	--	--	--	--	--
1995									
Low	275	579	854	--	--	--	--	--	--
Medium	288	597	885	--	--	--	--	--	--
High	288	597	885	--	--	--	--	--	--
2000									
Low	301	615	916	--	--	--	--	--	--
Medium	314	633	947	--	--	--	--	--	--
High	328	664	992	--	--	--	--	--	--
Powder River Region									
1990									
Low	8,771	14,459	23,230	--	14,294	23,065	8,771	14,172	22,943
Medium	9,261	15,332	24,593	--	15,086	24,347	9,261	14,964	24,225
High	9,751	17,072	26,823	--	16,782	26,533	9,751	16,452	26,203
1995									
Low	10,878	16,394	27,272	10,633	16,246	26,879	10,486	15,953	26,439
Medium	11,564	18,087	29,651	11,270	17,745	29,015	11,123	17,449	28,572
High	13,279	21,475	34,754	12,936	21,266	34,202	12,544	20,700	33,244
2000									
Low	11,662	17,528	29,190	--	17,734	29,396	11,417	17,299	28,716
Medium	13,181	20,425	33,606	12,985	20,225	33,210	12,740	19,787	32,527
High	15,974	25,372	41,346	--	25,659	41,633	15,582	25,094	40,676

*For methodology, see Appendix 4.

**Figures for alternative shown only where they differ from those for No New Federal Leasing.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

TABLE 4-17 (continued)
COAL-RELATED WATER USE*
(acre-feet/year)

Production Level	No New Federal Leasing No Action			Preference Right and Emergency Leasing**			Proposed Action**		
	Mining	Population	Total	Mining	Population	Total	Mining	Population	Total
Green River-Hams Fork Region									
1990									
Low	992	6,751	7,743	968	6,512	7,480	968	6,468	7,436
Medium	1,016	7,083	8,099	339	6,922	7,261	992	6,800	7,792
High	1,016	7,243	8,259	339	7,020	7,359	1,016	6,816	7,832
1995									
Low	871	6,261	7,132	339	6,261	6,600	--	6,153	7,024
Medium	895	6,531	7,426	--	6,626	7,521	--	6,484	7,379
High	968	8,122	9,090	1,089	8,277	9,366	1,016	7,445	8,461
2000									
Low	847	6,376	7,223	--	--	--	799	5,824	6,623
Medium	847	6,310	7,157	895	6,849	7,744	799	5,824	6,623
High	1,283	12,664	13,947	1,379	11,375	12,754	1,137	8,220	9,357
Uinta-Southwestern Utah Region									
1990									
Low	419	23,503	23,922	--	24,307	24,726	419	24,571	24,990
Medium	434	24,239	24,673	465	26,515	26,980	465	26,650	27,115
High	450	24,975	25,425	465	26,515	26,980	465	27,718	28,183
1995									
Low	465	25,582	26,047	574	30,466	31,040	605	32,472	33,077
Medium	481	26,184	26,665	620	32,405	33,025	651	34,816	35,467
High	527	28,257	28,784	620	32,405	33,025	775	41,105	41,880
2000									
Low	527	28,527	29,054	574	30,466	31,040	698	36,890	37,588
Medium	527	28,392	28,919	589	30,932	31,521	760	39,969	40,729
High	558	29,919	30,288	589	30,932	31,521	930	48,467	49,397

*For methodology, see Appendix 4.

**Figures are shown only where they differ from those for No New Federal Leasing.

WATER RESOURCES

TABLE 4-17 (concluded)
COAL-RELATED WATER USE*
(acre-feet/year)

Production Level	No New Federal Leasing No Action			Preference Right and Emergency Leasing**			Proposed Action**		
	Mining	Population	Total	Mining	Population	Total	Mining	Population	Total
San Juan River Region									
1990									
Low	1,672	2,728	4,400	--	2,677	4,349	--	2,677	4,349
Medium	1,672	2,806	4,478	--	2,755	4,427	--	2,755	4,427
High	1,748	2,916	4,664	1,672	2,857	4,529	1,672	2,806	4,478
1995									
Low	1,976	3,165	5,141	1,824	3,050	4,874	1,824	2,948	4,772
Medium	2,204	3,339	5,543	2,052	3,390	5,442	2,052	3,120	5,172
High	2,356	3,532	5,888	--	--	--	2,204	3,339	5,543
2000									
Low	2,584	3,835	6,419	--	3,886	6,470	2,280	3,449	5,729
Medium	2,584	3,757	6,341	--	3,974	6,558	2,280	3,371	5,651
High	2,812	4,033	6,845	--	--	--	2,584	3,757	6,341
Alabama Subregion***									
1990									
Low	6,711	10,035	16,746	--	--	--	--	--	--
Medium	6,711	10,035	16,746	--	--	--	--	--	--
High	6,711	10,035	16,746	--	--	--	--	--	--
1995									
Low	7,704	10,150	17,854	--	--	--	--	--	--
Medium	7,704	10,150	17,854	--	--	--	--	--	--
High	7,704	10,150	17,854	--	--	--	--	--	--
2000									
Low	8,141	10,211	18,352	--	--	--	--	--	--
Medium	8,201	10,211	18,412	--	--	--	--	--	--
High	9,450	10,415	19,865	--	--	--	--	--	--

*For methodology, see Appendix 4.

**Figures are shown only where they differ from those for No New Federal Leasing.

***Mining water use includes coal processing (beneficiation) in the Alabama Subregion.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

The impacts at the medium and high production levels would be similar to those at the low production level but greater and spread over a larger area (Table 4-17).

Green River-Hams Fork Region. Impacts to water resources at the low production level in the Green River-Hams Fork Region would occur most significantly to surface and ground water quality. But because of mitigation required by state and federal strip mining laws, changes in surface water sedimentation outside mine boundaries would be insignificant. Reduced runoff would be significant only immediately below sediment detention reservoirs. On a regional basis, the mined areas would be too small to significantly affect surface runoff.

Many coal beds in the region act as aquifers, and ground water quality could change within and near areas where overburden is removed for mining. Where these coal beds form shallow aquifers, rural residents sometimes use them for a water source. Generally, mining would temporarily disrupt this source of supply and draw down water levels in and near a surface mine. Over the long term, mining would degrade water quality, but replacement water supplies could be obtained from deeper aquifers unaffected by mining.

Coal-related water use would decrease and vary from 7,743 to 7,223 acre-feet/year (Table 4-17). Because most waters of this region are fully appropriated, coal-related water supplies would generally have to be purchased from other users. Acquiring water for mining would slightly shift types of water use and stress an already stretched water supply as more of the limited unappropriated water is put into use.

The Colorado River Basin has large areas of low annual precipitation and highly saline geology. The influx of people and growth of irrigation and energy development in the basin over the last century have made already scarce water supplies even more critical. The use of the river system's water has resulted in a national and international water quality and salinity problem. In addition, some mines have been or in the future may be concentrated in relatively small areas. The cumulative impacts of small increases in surface and ground water salinity and increased water use by mines and expanded populations could create significant regional problems.

The impacts at the medium and high production levels would be similar to those at the low production level but would be spread over a larger area and might involve an overall increase in regional salinity. Coal-related water use would decrease to as much as 7,157 acre-feet/year at the medium production level and increase to as much as 13,947 acre-feet/year at the high production level in the year 2000.

Uinta-Southwestern Utah. At the low production level, impacts to water resources from underground mining would occur most significantly because of subsidence. Where coal has been removed underground, overburden tends to fracture and subside. This subsidence could significantly divert the flow path of surface water underground and could cause ground water to more rapidly move through aquifers. In addition, the flow of springs and level of well water may be decreased or increased, depending upon the specific location of coal mining.

WATER RESOURCES

Underground mining generally disturb only small surface areas and does not disturb the overburden. Changes in sediment rates and salinity due to mine-mouth development should be insignificant. Water use is estimated to be from 23,922 to 29,054 acre-feet/year (Table 4-17).

Impacts at the medium and low production levels would be similar to those described for the low production level except that more coal would be mined and impacts would occur over a slightly larger area. Water use for the mines and associated populations would also increase (Table 4-17).

San Juan River Region. At all three production levels, impacts to water resources in the San Juan River Region would occur most significantly to ground water. But because of mitigation required by state and federal strip mining laws, changes in surface water sedimentation outside the mine boundaries due to surface runoff from the mine would be insignificant. Reduced runoff would be significant only immediately below sediment detention reservoirs. On a regional basis, the mined areas would be too small to significantly affect surface runoff.

Many coal beds in the region are aquifers, and ground water quality could change within and near areas where overburden is removed for mining. Where these coal beds form shallow aquifers, rural residents sometimes use aquifers as water sources. Generally, mining would temporarily disrupt this source of supply and draw down water levels in and near a surface mine. Over the long term, mining would degrade water quality, but replacement water supplies could be obtained from deeper aquifers unaffected by mining.

Coal-related water use would vary from 4,400 to 6,419 acre-feet/year (Table 4-17). Because water in the region is fully appropriated, any increase in use would have to be obtained from other water users. Meeting water needs for mining would require a rearrangement of water uses or the importing of water from outside the region.

The Colorado River Basin has large areas of low annual precipitation and highly saline geology. The influx of people and growth of irrigation and energy development in the basin over the last century has made already scarce water supplies even more critical. The use of the river system's water has resulted in a national and international water quantity and salinity problem. The cumulative impacts of small increases in ground and surface water salinity and increased water use by mines and expanded populations could create significant regional problems.

Alabama Subregion. Impacts to water resources in the Alabama Subregion would occur most significantly to ground water quantity and surface water quality. But because of the mitigation required by state and federal strip mining laws, changes in surface water quality would be significant only in the mine area and the tributaries to major streams. Locally, changes in surface water quality would include increased mineralization and acidity or alkalinity, depending upon the geology. Sediment impacts should be slight downstream from mines because of mitigation regulations.

DESCRIPTION OF THE ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

The coal-bearing strata in most of the subregion acts as an aquifer. Changes in quality and availability of ground water could occur within and next to the areas where overburden is removed for coal production. In many places the only source of ground water would be altered. Generally, mining would temporarily disrupt this source of supply and draw down water levels in and near open mine pits. Over the long term, mining would degrade water quality.

Underground mining is not expected to significantly affect surface water because of the depth of coal and competence of the overlying strata. Such mining could change the flow characteristics of ground water by opening new paths of water movement, which could lower or raise water levels and increase yields, depending upon where coal is mined.

Coal-related water use would range from 16,746 to 18,352 acre-feet/year (Table 4-17) but would not cause a significant problem in the subregion.

Impacts at the medium and high production levels would be similar to those described for the low production level except that more coal would be mined and impacts would occur over a slightly larger area. Water use for the mines and associated populations would also increase (Table 4-17).

Preference Right and Emergency Leasing

Fort Union. Impacts to water resources would be the same as those discussed for No New Federal Leasing.

Powder River Region. Impacts to water resources would be similar to those discussed for No New Federal Leasing except that rates would be lower at the low and medium production levels. At the high production levels, the production rate would be lower in 1990 and 1995 and would then rise in 2000. For different production rates, the impacts would be similar but would occur over a different size area (Table 4-13). Coal-related water use would range from a decrease of 2 percent to an increase of about 1 percent (Table 4-17), an insignificant change for the Powder River Region.

Green River-Hams Fork Region. Impacts to water resources would be similar to those under No New Federal Leasing except that in 1990, production would be lower and impacts would be spread over a smaller area (Table 4-13).

Uinta-Southwestern Utah. Impacts to water resources would be similar to those under No New Federal Leasing except that they would be greater. At the higher production levels, impacts would be similar but would occur over a larger area (Table 4-13). In addition, increases in coal-related water use would range from 3 to 24 percent (Table 4-17), possibly increasing the stress on the already limited water supply.

San Juan River Region. Impacts would be similar to those under No New Federal Leasing (Table 4-13). Coal-related water use would range from a 1 percent increase to a 5 percent decrease (Table 4-17).

Alabama Subregion. Impacts under this alternative would be the same as those under No New Federal Leasing.

WATER RESOURCES

Proposed Action

Fort Union. Impacts to water resources would be the same as those under No New Federal Leasing.

Powder River Region. Impacts would be similar to those under No New Federal Leasing except that they would be lower. Changes in coal-related water use would likewise decrease from 1 to 4 percent (Table 4-17).

Green River-Hams Fork Region. Impacts would be similar to those under No New Federal Leasing except that by 2000, production rates would be lower. For lower production rates, the impacts would be similar to those under No New Federal Leasing, but they would occur over a smaller area. In addition, coal-related water use would decrease from 1 to 33 percent (Table 4-17).

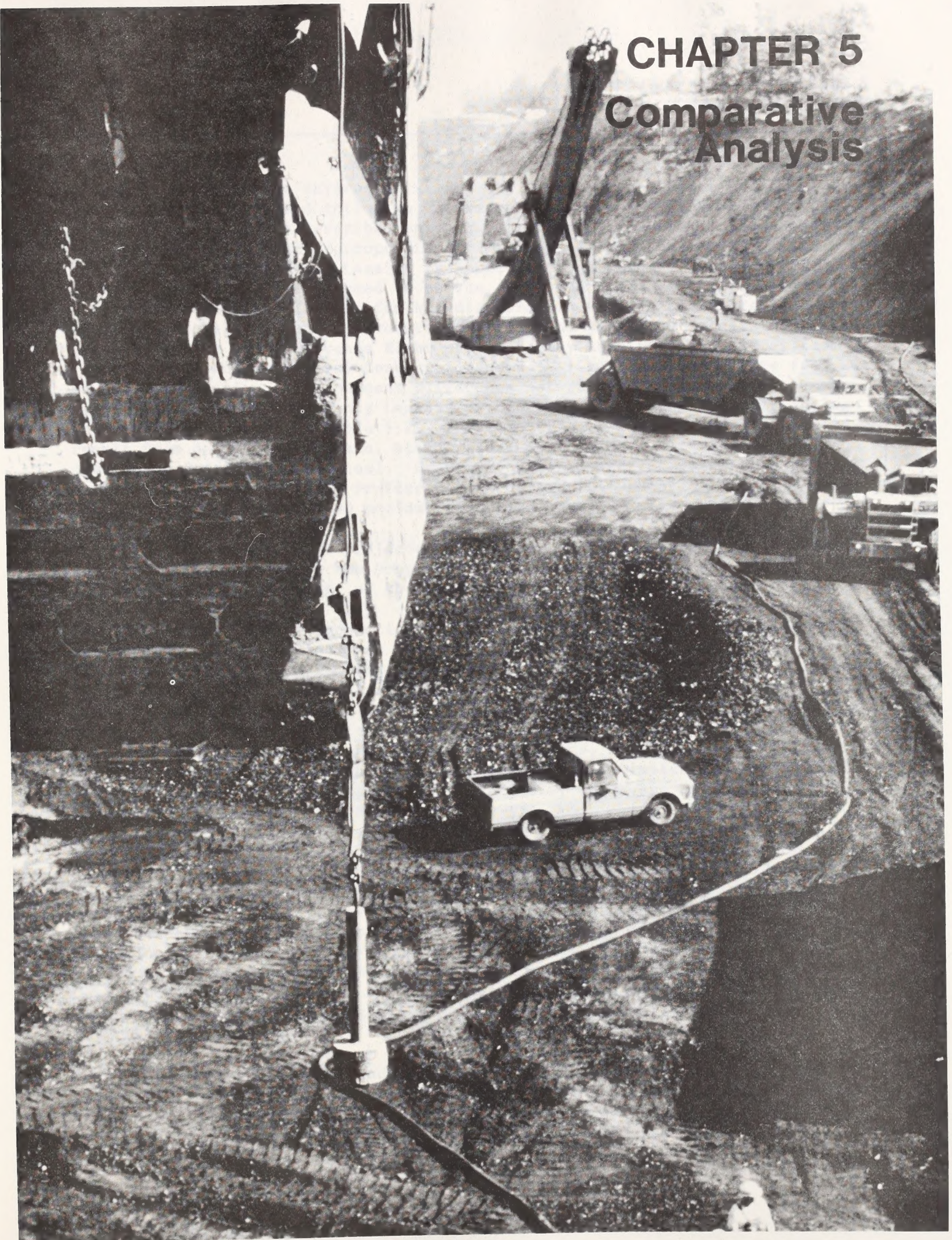
Uinta-Southwestern Utah. Impacts would be similar to those under No New Federal Leasing except that production rates would be higher. In addition, coal-related water use would increase from 4 to 63 percent (Table 4-17), increasing the stress on the already limited water supply.

San Juan River Region. Impacts would be similar to those under No New Federal Leasing except that production rates would decrease. In addition, coal-related water use would decrease by from 1 to 11 percent (Table 4-17).

Alabama Subregion. Impacts under the Proposed Action would be the same as those under No New Federal Leasing.

CHAPTER 5

Comparative Analysis



Chapter 5 compares the environmental impacts of Preference Right and Emergency Leasing and the Proposed Action to the impacts of No New Federal Leasing (no action baseline). It describes only the unavoidable adverse impacts because the program includes all appropriate mitigation. Because coal production estimates are the same for Leasing by Application as for the Proposed Action, impacts for the two are assumed to be the same, and Leasing by Application is not presented in Table 5-1 or further discussed in this chapter. Table 5-1 shows numerically by region, production level, and year, how impacts under the Proposed Action and Preference Right and Emergency Leasing would differ from impacts under No New Federal Leasing. Dashes (--) represent no change from No New Federal Leasing. The percent difference between the Proposed Action and Preference Right and Emergency Leasing on one hand and No New Federal Leasing on the other is shown in Table 5-2. The same type of impacts were assumed to result from developing private, state, and Indian-owned coal as from developing federally owned coal. Chapter 5's final section presents a general comparison between the 1979 Preferred Program and the Proposed Action of this supplemental EIS at the 1990 medium production level.

The Powder River Region is projected to produce about 60 percent of the coal for the six regions under the Proposed Action or alternatives and would generally sustain over half of the coal-related impacts.

The major shift in coal production under the Proposed Action relative to No New Federal Leasing would be an increase of 24 million tons/year in the Uinta-Southwestern Utah Region and decreases of 8, 6, and 3 million tons/year in the Powder River, Green River-Hams Fork, and San Juan River regions, respectively. This increase of 60 percent or more over No New Federal Leasing in the Uinta-Southwestern Utah Region would be significant in the measured resource impacts shown in Table 5-1 (socioeconomics, health and safety, air quality, soils and vegetation, minerals, and water). Similar increases would occur in impacts that are assessed qualitatively, which are affected by population changes and land disturbance.

In addition, some intraregional shifts would cause changes in impacts, particularly in the Green River-Hams Fork Region. These shifts would cause greater than proportional changes in employment, in population, and in some resources because of (1) shifts from subsurface to surface mining, (2) increased severance taxes resulting from shifts to Wyoming (which has a dramatically higher tax rate than Colorado), and (3) changes in air quality caused by increased emissions in Wyoming and reduced emissions in Colorado. Coal production would remain the same under all alternatives in the Fort Union Region and the Alabama Subregion, and differences in impacts among alternatives would be slight in these regions.

Coal production under Preference Right and Emergency Leasing would be only slightly higher than that under No New Federal Leasing in the Green River-Hams Fork (4 million tons/year) and the Uinta-Southwestern Utah Region (2 million

CHAPTER 5

TABLE 5-1
COMPARATIVE ANALYSIS

Powder River Region							
Production Level	Socioeconomics (total population)	Health and Safety (accidents)	Air Quality (TSP--tons/year)		Soils and Vegetation (acres disturbed)	Minerals (coal mined--million tons/year)	Water Use (acre-feet/year)
			Wyoming	Montana			
No New Federal Leasing							
1990							
Low	49,860	1,061	176,400	38,400	3,240	179	23,230
Medium	52,870	1,120	186,000	40,800	3,421	189	24,593
High	58,870	1,180	198,000	40,800	3,602	199	26,823
1995							
Low	56,530	1,316	228,000	38,400	4,018	222	27,272
Medium	62,370	1,399	240,000	43,200	4,272	236	29,651
High	74,050	1,606	279,600	45,600	4,905	271	34,754
2000							
Low	60,440	1,411	237,600	48,000	4,308	238	29,190
Medium	70,430	1,594	274,800	48,000	4,869	269	33,606
High	87,490	1,932	298,800	92,400	5,901	326	41,346
Preference Right and Emergency Leasing							
1990							
Low	49,290 (-570)	--	--	--	--	--	23,065 (-165)
Medium	52,020 (-850)	--	--	--	--	--	24,347 (-246)
High	57,870 (-1,000)	--	--	--	--	--	26,533 (-290)
1995							
Low	56,020 (-510)	1,286 (-30)	223,200 (-4,800)	37,200 (-1,200)	3,928 (-90)	217 (-5)	26,879 (-393)
Medium	61,190 (-1,180)	1,363 (-36)	234,000 (-6,000)	42,000 (-1,200)	4,164 (-108)	230 (-6)	29,013 (-636)
High	73,330 (-720)	1,565 (-41)	271,200 (-8,400)	--	4,779 (-126)	264 (-7)	34,202 (-552)
2000							
Low	61,150 (+710)	--	--	--	--	--	29,396 (+206)
Medium	69,740 (-690)	1,571 (-23)	270,000 (-4,800)	--	4,797 (-72)	265 (-4)	33,210 (-396)
High	88,480 (+990)	--	318,000 (+19,200)	73,200 (-19,200)	--	--	41,633 (+287)
Proposed Action*							
1990							
Low	48,870 (-990)	--	--	--	--	--	22,943 (-287)
Medium	51,600 (-1,270)	--	--	--	--	--	24,225 (-368)
High	56,730 (-2,140)	--	--	--	--	--	26,203 (-620)
1995							
Low	55,010 (-1,520)	1,268 (-48)	219,600 (-8,400)	37,200 (-1,200)	3,873 (-145)	214 (-8)	26,439 (-833)
Medium	60,170 (-2,200)	1,346 (-53)	230,400 (-9,600)	42,000 (-1,200)	4,109 (-163)	227 (-9)	28,572 (-1,079)
High	71,380 (-2,670)	1,517 (-89)	261,600 (-18,000)	--	4,634 (-271)	256 (-15)	33,244 (-1,510)
2000							
Low	59,650 (-790)	1,381 (-30)	234,000 (-3,600)	45,600 (-2,400)	4,218 (-90)	233 (-5)	28,716 (-474)
Medium	68,230 (-2,200)	1,541 (-53)	264,000 (-10,800)	--	4,706 (-163)	260 (-9)	32,527 (-1,079)
High	86,530 (-960)	1,885 (-47)	331,200 (+32,400)	50,400 (-42,000)	5,756 (-145)	318 (-8)	40,676 (-670)

Note: Numbers for the Proposed Action and Preference Right and Emergency Leasing are shown only where they differ from No New Federal Leasing. Numbers in parenthesis represent change from No New Federal Leasing.

*These impacts would also apply to the Leasing by Application Alternative.

COMPARATIVE ANALYSIS

TABLE 5-1 (continued)
COMPARATIVE ANALYSIS

Green River-Hams Fork Region							
Production Level	Socioeconomics (total population)	Health and Safety (accidents)	Air Quality (TSP--tons/year)		Soils and Vegetation (acres disturbed)	Minerals (coal mined--million tons/year)	Water Use (acre-feet/year)
			Wyoming	Colorado			
No New Federal Leasing							
1990							
Low	24,820	353	32,400	13,600	2,591	41	7,743
Medium	26,040	387	32,400	14,000	2,596	42	8,099
High	26,630	387	32,400	14,000	2,596	42	8,259
1995							
Low	23,020	324	26,400	13,600	2,243	36	7,132
Medium	24,010	358	26,400	14,000	2,248	37	7,426
High	29,860	431	26,400	16,000	2,328	40	9,090
2000							
Low	23,440	346	24,000	14,000	2,109	35	7,223
Medium	23,200	346	24,000	14,000	2,109	35	7,157
High	46,560	894	25,200	21,600	2,326	53	13,947
Preference Right and Emergency Leasing							
Low	23,940 (-880)	320 (-33)	33,600 (+1,200)	12,000 (-1,600)	2,586 (-5)	40 (-1)	7,480 (-263)
Medium	25,450 (-590)	359 (-28)	33,600 (+1,200)	13,600 (-400)	2,660 (+64)	--	7,261 (-838)
High	25,810 (-820)	359 (-28)	33,600 (+1,200)	13,600 (-400)	2,600 (+64)	--	7,359 (-900)
1995							
Low	--	--	--	--	--	--	6,600 (-532)
Medium	24,360 (+350)	--	--	--	--	--	7,521 (+95)
High	30,430 (+570)	432 (+1)	33,600 (+7,200)	15,600 (-400)	2,740 (+412)	45 (+5)	9,366 (+276)
2000							
Low	--	--	--	--	--	--	--
Medium	25,180 (+1,980)	385 (+39)	--	15,600 (+1,600)	2,184 (+75)	37 (+2)	7,744 (+587)
High	41,820 (-4,740)	724 (-170)	38,400 (+13,200)	18,800 (-2,800)	3,056 (+730)	57 (+4)	12,754 (-1,193)
Proposed Action*							
1990							
Low	23,780 (-1,040)	320 (-33)	33,600 (+1,200)	12,000 (-1,600)	2,586 (-5)	40 (-1)	7,436 (-307)
Medium	25,000 (-1,040)	353 (-34)	33,600 (+1,200)	12,400 (-1,600)	2,591 (-5)	41 (-1)	7,792 (-307)
High	25,060 (-1,570)	359 (-28)	33,600 (+1,200)	13,600 (-400)	2,660 (+64)	--	7,832 (-427)
1995							
Low	22,620 (-400)	--	--	--	--	--	7,024 (-108)
Medium	23,840 (-170)	--	--	--	--	--	7,379 (-47)
High	27,370 (-2,490)	359 (-72)	33,600 (+7,200)	13,600 (-2,400)	2,660 (+332)	42 (+2)	8,461 (-629)
2000							
Low	21,410 (-2,030)	306 (-40)	22,800 (-1,200)	13,600 (-400)	2,035 (-74)	33 (-2)	6,623 (-600)
Medium	21,410 (-1,790)	306 (-40)	22,800 (-1,200)	13,600 (-400)	2,035 (-74)	33 (-2)	6,623 (-534)
High	30,220 (-16,340)	417 (-477)	38,400 (+13,200)	14,000 (-7,600)	2,943 (+617)	47 (-6)	9,357 (-4,590)

Note: Numbers for the Proposed Action and Preference Right and Emergency Leasing are shown only where they differ from No New Federal Leasing. Numbers in parenthesis represent change from No New Federal Leasing.

*These impacts would also apply to the Leasing by Application Alternative.

CHAPTER 5

TABLE 5-1 (continued)
COMPARATIVE ANALYSIS

Uinta-Southwestern Utah Region							
Production Level	Socioeconomics (total population)	Health and Safety (accidents)	Air Quality (TSP--tons/year)		Soils & Vegetation (acres disturbed)	Minerals (coal mined--million tons/year)	Water Use (acre-feet/year)
			Colorado	Utah			
No New Federal Leasing							
1990							
Low	41,820	905	2,800	8,000	149	27	23,922
Medium	43,130	939	3,200	8,000	154	28	24,673
High	44,440	972	3,600	8,000	160	29	25,425
1995							
Low	45,520	1,006	2,000	10,000	166	30	26,047
Medium	46,590	1,039	2,400	10,000	171	31	26,665
High	50,280	1,140	3,600	10,000	188	34	28,784
2000							
Low	50,760	1,140	2,800	10,800	188	34	29,054
Medium	50,520	1,140	2,800	10,800	188	34	28,919
High	52,900	1,207	3,600	10,800	198	36	30,288
Preference Right and Emergency Leasing							
Low	43,250 (+1,430)	--	2,400 (-400)	8,400 (+400)	--	--	24,726 (+804)
Medium	47,180 (+4,050)	1,006 (+67)	3,600 (+400)	8,400 (+400)	165 (+11)	30 (+2)	26,980 (+2,307)
High	47,180 (+2,740)	1,006 (+34)	--	8,400 (+400)	165 (+5)	30 (+1)	26,980 (+1,555)
1995							
Low	54,210 (+8,690)	1,241 (+235)	--	12,800 (+2,800)	204 (+38)	37 (+7)	31,040 (+4,993)
Medium	57,660 (+11,070)	1,341 (+302)	3,200 (+800)	12,800 (+2,800)	220 (+49)	40 (+9)	33,025 (+6,360)
High	57,660 (+7,380)	1,341 (+201)	3,200 (-400)	12,800 (+2,800)	220 (+32)	40 (+6)	33,025 (+4,241)
2000							
Low	54,210 (+3,450)	1,241 (+101)	--	12,000 (+1,200)	204 (+16)	37 (+3)	31,040 (+1,986)
Medium	55,040 (+4,520)	1,274 (+134)	3,200 (+400)	12,000 (+1,200)	209 (+21)	38 (+4)	31,521 (+2,602)
High	55,040 (+2,140)	1,274 (+67)	3,200 (-400)	12,000 (+1,200)	209 (+11)	38 (+2)	31,521 (+1,233)
Proposed Action*							
1990							
Low	43,720 (+1,900)	--	2,000 (-800)	8,800 (+800)	--	--	24,990 (+1,068)
Medium	47,420 (+4,290)	1,006 (+67)	2,000 (-1,200)	10,000 (+2,000)	149 (-5)	30 (+2)	27,115 (+2,442)
High	49,320 (+4,880)	1,006 (+34)	2,000 (-1,600)	10,000 (+2,000)	149 (-11)	30 (+1)	28,183 (+2,758)
1995							
Low	57,780 (+12,260)	1,308 (+302)	1,600 (-400)	14,000 (+4,000)	215 (+49)	39 (+9)	33,077 (+7,030)
Medium	61,950 (+15,360)	1,408 (+369)	2,000 (-400)	14,800 (+4,800)	232 (+61)	42 (+11)	35,467 (+8,802)
High	73,140 (+22,860)	1,676 (+536)	2,000 (-1,600)	18,000 (+8,000)	276 (+88)	50 (+16)	41,880 (+13,096)
2000							
Low	65,640 (+14,880)	1,509 (+369)	1,600 (-1,200)	16,400 (+5,600)	248 (+60)	45 (+11)	37,588 (+8,534)
Medium	71,120 (+20,600)	1,643 (+503)	2,400 (-400)	17,200 (+6,400)	270 (+82)	49 (+15)	40,729 (+11,810)
High	86,240 (+33,340)	2,012 (+805)	--	20,400 (+9,600)	331 (+133)	60 (+24)	49,397 (+19,109)

Note: Numbers for the Proposed Action and Preference Right and Emergency Leasing are shown only where they differ from No New Federal Leasing. Numbers in parenthesis represent change from No New Federal Leasing.

*These impacts would also apply to the Leasing by Application Alternative.

COMPARATIVE ANALYSIS

TABLE 5-1 (concluded)
COMPARATIVE ANALYSIS

San Juan River Region						
Production Level	Socioeconomics (total population)	Health and Safety (accidents)	Air Quality (TSP—tons/year)	Soils & Vegetation (acres disturbed)	Minerals (coal mined—million tons/year)	Water Use (acre-feet/year)
No New Federal Leasing						
1990						
Low	10,180	130	26,400	904	22	4,400
Medium	10,470	130	26,400	904	22	4,478
High	10,880	136	27,600	945	23	4,664
1995						
Low	11,810	154	31,200	1,068	26	5,141
Medium	12,460	172	34,800	1,192	29	5,543
High	13,180	184	37,200	1,274	31	5,888
2000						
Low	14,310	202	40,800	1,397	34	6,419
Medium	14,020	202	40,800	1,397	34	6,341
High	15,050	219	44,400	1,521	37	6,845
Preference Right and Emergency Leasing						
1990						
Low	9,390 (-190)	--	--	--	--	4,349 (-51)
Medium	10,280 (-190)	--	--	--	--	4,427 (-51)
High	10,660 (-220)	130 (-6)	26,400 (-1,200)	904 (-41)	22 (-1)	4,529 (-135)
1995						
Low	11,380 (-430)	142 (-12)	28,800 (-2,400)	986 (-82)	24 (-2)	4,874 (-267)
Medium	12,650 (+190)	160 (-12)	32,400 (-2,400)	1,110 (-82)	27 (-2)	5,442 (-101)
High	--	--	--	--	--	--
2000						
Low	14,500 (190)	--	--	--	--	6,470 (+51)
Medium	14,830 (810)	--	--	--	--	6,558 (+217)
High	--	--	--	--	--	--
Proposed Action*						
1990						
Low	9,990 (-190)	--	--	--	--	4,349 (-51)
Medium	10,280 (-190)	--	--	--	--	4,429 (-49)
High	10,470 (-410)	130 (-6)	26,400	904 (-41)	22 (-1)	4,478 (-186)
1995						
Low	11,000 (-810)	142 (-12)	28,800 (-2,400)	986 (-82)	24 (-2)	4,772 (-369)
Medium	11,640 (-820)	160 (-12)	32,400 (-2,400)	1,110 (-82)	27 (-2)	5,172 (-371)
High	12,460 (-720)	172 (-12)	34,800 (-2,400)	1,192 (-82)	29 (-2)	5,543 (-345)
2000						
Low	12,870 (-1,440)	178 (-24)	36,000 (-4,800)	1,233 (-164)	30 (-4)	5,729 (-690)
Medium	12,580 (-1,440)	178 (-24)	36,000 (-4,800)	1,233 (-164)	30 (-4)	5,651 (-690)
High	14,020 (-1,030)	202 (-17)	40,800 (-3,600)	1,397 (-124)	34 (-3)	6,341 (-504)

Note: Numbers for the Proposed Action and Preference Right and Emergency Leasing are shown only where they differ from No New Federal Leasing. Numbers in parenthesis represent change from No New Federal Leasing.

*These impacts would also apply to the Leasing by Application Alternative.

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TABLE 5-2
PERCENT CHANGE FROM NO NEW FEDERAL LEASING

Powder River Region							
Production Level	Socioeconomics (total population)	Health & Safety (accidents)	Air Quality (TSP--tons/year)		Soils and Vegetation (acres disturbed)	Minerals (coal mined-- million tons/year)	Water Use (acre-feet/year)
			Wyoming	Montana			
Preference Right and Emergency Leasing							
1990							
Low	-1	0	0	0	0	0	-1
Medium	-2	0	0	0	0	0	-1
High	-2	0	0	0	0	0	-1
1995							
Low	-1	-2	-2	-3	-2	-2	-1
Medium	-2	-3	-3	-3	-3	-3	-2
High	-1	-3	-3	0	-3	-3	-2
2000							
Low	+1	0	0	0	0	0	+1
Medium	-1	-1	-2	0	-1	-1	-1
High	+1	0	+6	-21	0	0	+1
Proposed Action*							
1990							
Low	-2	0	0	0	0	0	-1
Medium	-2	0	0	0	0	0	-1
High	-4	0	0	0	0	0	-2
1995							
Low	-3	-4	-4	-3	-4	-4	-3
Medium	-4	-4	-4	-3	-4	-4	-4
High	-4	-6	-6	0	-6	-6	-4
2000							
Low	-1	-2	-2	-5	-2	-2	-2
Medium	-3	-3	-4	0	-3	-3	-3
High	-1	-2	+11	-45	-2	-2	-2

*These impacts would also apply to the Leasing by Application Alternative.

COMPARATIVE ANALYSIS

TABLE 5-2 (continued)
PERCENT CHANGE FROM NO NEW FEDERAL LEASING

Green River-Hams Fork Region							
Production Level	Socioeconomics (total population)	Health & Safety (accidents)	Air Quality (TSP--tons/year)		Soils and Vegetation (acres disturbed)	Minerals (coal mined-- million tons/year)	Water Use (acre-feet/year)
			Wyoming	Colorado			
Preference Right and Emergency Leasing							
1990							
Low	-4	-9	+4	-12	-1	-2	-3
Medium	-2	-7	+4	-3	+2	0	-10
High	-3	-7	+4	-3	+2	0	-11
1995							
Low	0	0	0	0	0	0	-7
Medium	+1	0	0	0	0	0	+1
High	+2	+1	+27	-3	+18	+13	+3
2000							
Low	0	0	0	0	0	0	0
Medium	+9	+11	0	+11	+4	+6	+8
High	-10	-19	+52	-13	+31	+8	-9
Proposed Action*							
1990							
Low	-4	-9	+4	-12	-1	-2	-4
Medium	-4	-9	+4	-11	-1	-2	-4
High	-6	-7	+4	-3	+2	0	-5
1995							
Low	-2	0	0	0	0	0	-2
Medium	-1	0	0	0	0	0	-1
High	-8	-17	+27	-15	+14	+5	-7
2000							
Low	-9	-12	-5	-3	-4	-6	-8
Medium	-8	-12	-5	-3	-4	-6	-7
High	-35	-53	+52	-35	+27	-11	-33

*These impacts would also apply to the Leasing by Application Alternative.

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TABLE 5-2 (continued)
PERCENT CHANGE FROM NO NEW FEDERAL LEASING

Uinta-Southwestern Utah Region							
Production Level	Socioeconomics (total population)	Health & Safety (accidents)	Air Quality (TSP--tons/year)		Soils & Vegetation (acres disturbed)	Minerals (coal mined-- million tons/year)	Water Use (acre-feet/year)
			Colorado	Utah			
Preference Right and Emergency Leasing							
1990							
Low	+3	0	-14	+5	0	0	+3
Medium	+9	+7	+13	+5	+7	+7	+9
High	+6	+3	0	+5	+3	+3	+6
1995							
Low	+19	+23	0	+28	+23	+23	+19
Medium	+24	+29	+33	+28	+29	+29	+24
High	+15	+18	-11	+28	+17	+18	+15
2000							
Low	+7	+9	0	+11	+9	+9	+7
Medium	+9	+12	+14	+11	+11	+12	+9
High	+4	+6	-11	+11	+6	+6	+4
Proposed Action*							
1990							
Low	+5	0	-29	+10	0	0	+4
Medium	+10	+7	-38	+25	-3	+7	+10
High	+11	+3	-44	+25	-7	+3	+11
1995							
Low	+27	+30	-20	+40	+30	+30	+27
Medium	+33	+36	-17	+48	+36	+35	+33
High	+45	+47	-44	+80	+47	+47	+45
2000							
Low	+29	+32	-43	+52	+32	+32	+29
Medium	+41	+44	-14	+59	+44	+44	+41
High	+63	+67	0	+89	+67	+67	+63

*These impacts would also apply to the Leasing by Application Alternative.

COMPARATIVE ANALYSIS

TABLE 5-2 (concluded)
PERCENT CHANGE FROM NO NEW FEDERAL LEASING

San Juan River Region						
Production Level	Socioeconomics (total population)	Health & Safety (accidents)	Air Quality (TSP tons/year)	Soils & Vegetation (acres disturbed)	Minerals (coal mined-- million tons/year)	Water Use (acre-feet/year)
Preference Right and Emergency Leasing						
1990						
Low	-2	0	0	0	0	-1
Medium	-2	0	0	0	0	-1
High	-2	-4	-4	-4	-4	-3
1995						
Low	-4	-8	-8	-8	-8	-5
Medium	+2	-7	-7	-7	-7	-2
High	0	0	0	0	0	0
2000						
Low	+1	0	0	0	0	+1
Medium	+6	0	0	0	0	+3
High	0	0	0	0	0	0
Proposed Action*						
1990						
Low	-2	0	0	0	0	-1
Medium	-2	0	0	0	0	-1
High	-4	-4	-4	-4	-4	-4
1995						
Low	-7	-8	-8	-8	-8	-7
Medium	-7	-7	-7	-7	-7	-7
High	-5	-7	-6	-6	-6	-6
2000						
Low	-10	-12	-12	-12	-12	-11
Medium	-10	-12	-12	-12	-12	-11
High	-7	-8	-8	-8	-8	-7

*These impacts would also apply to the Leasing by Application Alternative.

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tons/year). Coal-related impacts under Preference Right and Emergency Leasing in these regions would thus be only slightly greater than under No New Federal Leasing as shown in Tables 5-1 and 5-2.

The comparative analysis concentrates on the quantitative resource impacts, which are most amenable to comparison, and their differences among alternatives are shown in Table 5-1. The narrative discussion focuses on quantitative and qualitative impacts for the high production level in 2000 for the Proposed Action, where generally the greatest differences would occur among the four regions where coal production would differ by alternative.

For the Preference Right and Emergency Leasing Alternative, the greatest differences among the impacts for the four regions would generally occur (1) at the 1995 medium production level in the Powder River and Uinta-Southwestern Utah regions, (2) at the 1995 low production level in the San Juan River Region, and (3) at the year 2000 high production level for the Green River-Hams Fork Region. A similar discussion was not presented for all other production levels and time periods because small or no differences among alternatives in most regions would tend to make such a discussion confusing or redundant. No comparison by alternative is given for the Fort Union Region and the Alabama Subregion because impacts would not differ among alternatives.

Coal production forecasts for the aggregated regions for the Proposed Action and No New Federal Leasing Alternative are shown in Table 3-1 and discussed briefly in Chapter 3. The largest difference is a 3 million ton/year decrease (less than 1 percent) between the Proposed Action and No New Federal Leasing for the aggregated Western regions at the 1995 high production level. Impacts associated with these minor shifts between the three major aggregated coal-producing regions are insignificant and are not discussed in this chapter.

The impacts used in the comparison are those changes associated with coal production for socioeconomics (population), health and safety (accidents), air resources (total suspended particulates--TSP), soils and vegetation (acres disturbed), mineral resources (annual coal production), and water use (acre-feet of water used per year). Because the supplemental EIS provides a program-level analysis, wildlife, visual resources, recreation resources, wilderness resources, cultural resources, and paleontological resources are compared only in the narrative. Transportation impacts would not significantly differ by alternative and are thus not discussed. Native American concerns vary little by alternative and are not included in the comparative analysis.

SOCIOECONOMICS

The 1982 base populations of 228,200 for the Powder River Region, 140,800 for the Green River-Hams Fork Region, and 215,600 for the Uinta-Southwestern Utah Region provide reference points for projected population changes. At the Preference Right and Emergency Leasing medium production level in 1995, population changes from the No New Federal Leasing baseline would range from a decrease of 1,180 in the Powder River Region to a significant increase of 11,070 (29 percent) in Uinta-Southwestern Utah Region. The Green River-Hams Fork Region would experience a population decrease of 4,740 at the year 2000 high production level. At the Proposed Action year 2000 high production level, the population change would range from a decrease of 16,340 (-35 percent) in the Green River-Hams Fork Region to an increase of 33,340

COMPARATIVE ANALYSIS

(63 percent) in the Uinta-Southwestern Utah Region. This reflects a 35 percent increase over the 1982 base population for the Uinta-Southwestern Utah Region.

HEALTH AND SAFETY

Annual accidents at the Preference Right and Emergency Leasing medium production level in 1995 would exceed those under No New Federal Leasing by 302 in the Uinta-Southwestern Region. The Powder River Region, however, would have 36 fewer accidents under Preference Right and Emergency Leasing at the same production level and time period. The Green River-Hams Fork Region would have 170 fewer accidents under Preference Right and Emergency Leasing at the year 2000 high production level. At the Proposed Action high production level in 2000, the Green River-Hams Fork Region would have 477 (-53 percent) fewer accidents because of a decrease of 6 million tons/year of coal production and decreased subsurface mining in Colorado and increased surface mining in Wyoming. Under the Proposed Action, the Uinta-Southwestern Utah Region would have 805 (67 percent) more accidents than under No New Federal Leasing because of increased coal production of 24 million tons/year, all in underground mining, which has a much higher accident rate than surface mining.

AIR RESOURCES

At the Preference Right and Emergency Leasing high production level in 2000, the Green River-Hams Fork Region would have 10,400 more annual tons of total suspended particulates (TSP) than under No New Federal Leasing. The San Juan River Region would have 2,400 fewer annual tons of TSP at the 1995 low production level. At the Preference Right and Emergency Leasing high production level in 2000, annual TSP in the Powder River Region would not change from that under No New Federal Leasing, but annual TSP in the Wyoming part of the region would increase by 19,200 tons and TSP in the Montana part of the region would decrease by 19,200 tons. Although the regional emissions total would be the same, the differences among the states would result from increased production in Montana and decreased production in Wyoming. At the Proposed Action high production level in 2000, annual TSP would range from 42,000 fewer tons per year than under No New Federal Leasing in the Montana part of Powder River Region to 32,400 more tons per year in the Wyoming part of this region for a net decrease of 9,600 tons per year for the entire region. Again, the state differences would result from decreased production in Montana and increased production in Wyoming.

SOILS AND VEGETATION

Potential impacts to soils and vegetation have been compared by examining the acres of land disturbance. Land disturbance is also the basis for comparing impacts to wildlife, visual resources, and cultural resources.

At the Preference Right and Emergency Leasing medium production level in 1995, 108 fewer acres would be disturbed in the Powder River Region than under No New Federal Leasing, whereas in the Uinta-Southwestern Utah Region, 49 more acres would be disturbed. At the Preference Right and Emergency Leasing high production level in the year 2000, 730 (31 percent) more acres of land would

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be disturbed in the Green River-Hams Fork Region than under No New Federal Leasing. At the Proposed Action high production level in 2000, 617 (27 percent) more acres would be disturbed in the Green River-Hams Fork Region, and 133 (67 percent) more acres would be disturbed in the Uinta-Southwestern Utah Region than under No New Federal Leasing. Under the Proposed Action, the Powder River Region would have 145 fewer disturbed acres than under No New Federal Leasing, and the San Juan River Region would have 124 fewer disturbed acres.

AGRICULTURE

Long-term impacts on agriculture would not be significant, even in the Green River-Hams Fork Region where acres disturbed under the Proposed Action and Preference Right and Emergency Leasing would increase over that of No New Federal Leasing by about 30 percent at the year 2000 high production level. Impacts would not be significant for the Uinta-Southwestern Region at the high production level in 2000, although the acres disturbed under the Proposed Action would increase by 67 percent over acres disturbed by No New Federal Leasing. Individual farmers and ranchers could be severely affected, especially in the short-run, depending upon the location of the leases because of dislocations in their operations, loss of production, and loss of grazing leases in some areas.

WILDLIFE

Program procedures would generally screen out impacts on high quality and critical wildlife habitat. Wildlife habitat disturbed by coal mining under the Proposed Action and Preference Right and Emergency Leasing would be essentially the same as are noted in the soils and vegetation column of Table 5-1 because vegetation is a habitat component. Generally, the more coal production and acres disturbed, the more habitat disturbed.

Poaching, illegal hunting, and wanton killing would also increase as human populations increase in the coal regions (see socioeconomic column in Table 5-1 for population increases). A straight-line projection can thus be used to predict increases in these illegal activities resulting from human population increases. Additionally, direct killing, harassment, and stress to wildlife species would increase due to an increase in free-roaming dogs.

VISUAL RESOURCES

Some alternatives would significantly affect visual resources in some regions. Visual resource impacts are related to the amount of surface disturbed (see soils and vegetation column of Table 5-1). Generally, the more coal mined, the greater the impact on visual resources. The impacts of any particular alternative, however, are not considered significant on a regional basis because they would be similar to existing visual intrusions. Where more mining occurs (particularly surface mining), landform and vegetation change would increase, and more structures would be built, similar to existing development and in the same general areas.

COMPARATIVE ANALYSIS

RECREATION RESOURCES

The main impact to recreation of any alternative would involve changes in recreation demand caused by changes in coal-related population. The most significant population increases are projected to occur in the Uinta-Southwestern Utah Region in 1995 and 2000 under both the Proposed Action and Preference Right and Emergency Leasing. Under the Proposed Action, population is projected to be less than under No New Federal Leasing in the Powder River, Green River-Hams Fork, and San Juan River regions for all production levels and years.

Some impacts, however, could still occur within regions where more mining would occur or population increases could be concentrated in a few small communities where existing demands for recreation already exceed the supply and many recreation facilities are already overused. Fishing and hunting would be most affected, with increased demand for recreation site maintenance and operating funds. Generally, decreased population pressure would benefit recreation resources in these regions. Table 5-1 shows that, under Preference Right and Emergency Leasing for these three regions, population at given production levels and time points would both increase and decrease, resulting in an uneven pattern of beneficial and adverse impacts on recreation resources. Few impacts if any would occur to existing recreation facilities or sites under any alternative because such areas have previously been determined to be unsuitable for mining under the unsuitability regulations.

WILDERNESS

New leasing in designated wilderness areas is now prohibited under the Wilderness Act. New leasing in BLM WSAs, Forest Service RARE II recommended wilderness areas, further planning areas, and congressionally designated WSAs is effectively prohibited by enactment of a ban of spending money for such leasing in the Interior Department Appropriations Acts for the last several fiscal years, most recently in Section 308 of Public Law 98-473.

Preference Right and Emergency Leasing could cause some new impacts in each region, but impacts would probably be significant only in the Uinta-Southwestern Utah Region. Coal mining could cause some new impacts in the Powder River and San Juan River regions under No New Federal Leasing, but the most significant impacts to regional wilderness resources could occur in the Green River-Hams Fork Region at the year 2000 high production level.

Wilderness would not be significantly affected in most regions and at most production levels under the Proposed Action but would be significantly affected at most production levels for all years in the Uinta-Southwestern Utah Region. The uncertainty of wilderness designation and lack of knowledge of where population would grow make it difficult to predict impacts to wilderness resources as a result of increased coal production. No direct impacts are expected from mining within designated wildernesses or areas under consideration for wilderness designation.

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No impacts would occur in the Alabama Subregion because it has no wilderness areas. Moreover, it is impossible to tell if outside sights and sounds would occur near the boundaries of most wilderness study areas because specific areas have not been selected for mining. The secondary impacts of increased coal-related populations using existing or proposed wilderness areas are also difficult to predict for the same reason. Increased populations, however, are expected to be small enough so as to cause few noticeable impacts to the areas and so as not to diminish the level of experience for wilderness users other than noted in the exceptions above and in the Wilderness section of Chapter 4.

CULTURAL RESOURCES

The type of impacts on cultural resources would not vary among the Proposed Action and alternatives. The size and number of impacts would vary by the amount of surface disturbance and population increase, but these impacts cannot be determined until inventories are conducted.

To develop a comparative analysis for cultural resources, the average cultural resource site density per acre and site distribution should be known. These factors can then be used as a multiplier for estimating sites disturbed for each region. As noted in Chapter 4, Cultural Resource Impacts, these factors are not known. A general idea of relative site disturbance among alternatives may be obtained by examining the acres of land disturbance under the soils and vegetation column in Table 5-1. One can generally assume that the more acres disturbed, the more sites disturbed. Although the Alabama Subregion has the most land disturbance, regional information in Chapter 4, Cultural Resource Impacts, reveals that the San Juan River Region has the most cultural sites and is expected to sustain more impacts than the other regions under the Proposed Action or alternatives.

MINERAL RESOURCES

Table 5-1 uses the change in estimated annual coal production to compare impacts to mineral resources by alternative. At the Preference Right and Emergency Leasing high production level in 2000, the Powder River and San Juan River regions would produce the same amount of coal as under No New Federal Leasing, while the Green River-Hams Fork and Uinta-Southwestern Utah regions would produce 4 and 2 million tons more of coal respectively. At the Proposed Action high production level in 2000, the Uinta-Southwestern Utah Region would produce 24 million more tons of coal than under No New Federal Leasing, the Green River-Hams Fork Region would produce 6 million fewer tons, and the Powder River Region would produce 8 million fewer tons.

PALEONTOLOGICAL RESOURCES

Paleontological impacts could be either beneficial or adverse, depending upon what agreement is worked out in permits between individual operators and the regulatory agency. These impacts would occur under the Proposed Action and all alternatives and would vary by region depending upon the level of coal production and the significance of paleontological resources in the region

COMPARATIVE ANALYSIS

(See Chapter 4, Paleontological Resource Impacts). The Green River-Hams Fork, San Juan River, and the Uinta-Southwestern Regions have the most significant paleontological resources.

The most significant fossils in the six coal regions occur in the Uinta-Southwestern Utah Region, whose coal production would increase dramatically in 1995 and 2000 at all production levels under the Proposed Action and in 1995 for for all production levels under Preference Right and Emergency Leasing. In this region for the above-mentioned times and production levels, the potential for adverse impacts under the Proposed Action and Preference Right and Emergency Leasing could significantly increase from mining and associated population increases. Under the Proposed Action, impacts to paleontological resources would be significantly less in the Green River-Hams Fork and San Juan River regions at all production levels in the year 2000 than under No New Federal Leasing. Under Preference Right and Emergency Leasing, significant impacts would occur at the year 2000 medium and high production levels in the Green River-Hams Fork Region.

WATER RESOURCES

Under the Proposed Action, coal-related water use at the high production level in 2000 would exceed such use under No New Federal Leasing baseline only in the Uinta-Southwestern Utah Region, by 19,109 acre-feet/year. Water use would fall below the baseline by 4,590 acre-feet/year in the Green River-Hams Fork Region, 504 acre-feet/year in the San Juan River Region, and 670 acre-feet/year in the Powder River Region. Under Preference Right and Emergency Leasing, water use at the high production level in 2000 would increase in the Powder River Region (287 acre-feet/year) and in the Uinta-Southwestern Utah Region (1,233 acre-feet/year). Larger increases, ranging from 4,993 to 6,360 acre-feet/year, would occur under this alternative in the Uinta-Southwestern Utah Region at all production levels in 1995.

COMPARISONS WITH THE 1979 PREFERRED PROGRAM

This section presents a general comparison of impacts projected for the 1979 FES (BLM 1979a) Preferred Program at the 1990 medium production level and impacts projected for this supplemental EIS (1985) Proposed Action at the 1990 medium production level. The major factor influencing these differences is the substantially reduced coal production estimates in 1985 (see Figure 3-1). Differences can also be attributed to the different scope of the 1985 analysis (not including powerplant coal use) and differences in loading factors or multipliers used for impact assessment. Substantial reductions in the coal production estimate in 1985 resulted in much lower potential impacts within the six regions that were compared with the 1979 Preferred Program. The following sections quantitatively or qualitatively compare impacts projected in 1979 to those projected in 1985 for the six coal regions combined, by the resources discussed in this supplemental EIS. Because the 1979 FES did not discuss visual resources, their projected impacts cannot be compared between 1979 and 1985.

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SOCIOECONOMICS

Impacts to employment, population, and royalty and severance tax revenues in 1990 at the medium production level under the 1985 Proposed Action would be about 80 percent lower than the impacts projected for the 1979 Preferred Program for the same production level and target year (Table 4-7). Under the 1985 Proposed Action, the following socioeconomics impacts would occur: (1) coal-related employment in the five coal regions that can be compared would be 55,700, which is 19 percent of the 291,000 employment projected for the 1979 Preferred Program; (2) coal-related population would be 138,900, which is 25 percent of the 557,600 population projected for the 1979 Preferred Program; and (3) coal-related royalty and severance tax revenues would be \$580 million, which is 27 percent of the \$2,135 million projected for the 1979 Preferred Program.

TRANSPORTATION

Because the 1979 FES and this supplemental EIS use different approaches and scopes, projected impacts to transportation cannot be directly compared. Projected coal production under the 1985 Proposed Action at the medium production level in 1990 would be about half that projected for the same target year and at the same production level under the 1979 Preferred Program. Therefore, projected impacts to transportation would be lower under the 1985 Proposed Action than under the 1979 Preferred Program.

HEALTH AND SAFETY

Coal mining is and will continue to be a high-risk occupation. Miners and plant workers will continue to be exposed to health hazards such as dust, harmful fumes, stress, and excessive noise. Health and safety hazards under the Proposed Action, however, should decline in the future for two reasons: (1) the shift in production from subsurface mines to surface mines, whose hazard rates are about only a ninth of those of subsurface mines, and (2) new technology in pollution control and mine safety and the enforcement of existing federal dust and safety standards.

The 1979 FES projected a six-region annual total of 4,284 accidents for the Preferred Program at the 1990 medium production level, as compared to 3,356 accidents projected for the 1985 Proposed Action for the same target year and production level.

NATIVE AMERICAN ISSUE

Because Native American issues and concerns were only briefly discussed in the 1979 FES, no comparison can be made between 1979 and 1985.

AIR RESOURCES

Total suspended particulates (TSP) calculated in the 1979 FES and in this supplemental EIS cannot be directly compared because (1) the 1979 FES did not include underground mines as a TSP source, and (2) this supplemental EIS does not include the conversion of coal to other energy forms as a TSP source. By reconciling those two minor differences, projected annual TSP under the 1979

COMPARATIVE ANALYSIS

Preferred Program medium production level for 1990 would be 720,400 tons, whereas annual TSP projected for the 1985 Proposed Action would be 373,200 tons, a 48 percent reduction from the 1979 projection.

SOILS AND VEGETATION

Under the 1985 Proposed Action medium production level for 1990, 55 percent less land would be disturbed than would be disturbed under the 1979 Preferred Program. Because specific sites to be mined or reclaimed are not known at this level of analysis, land disturbance impacts are discussed in general terms. Actual reclamation potential depends on characteristics of specific areas to be reclaimed. Coal development in all regions would affect lands with varying potential for reclamation. In both the 1979 FED and this supplemental EIS land disturbance by surface mining and coal beneficiation is combined. Since coal development is being extended on the basis of a significant downturn in the 1979 forecasts, coal operations are expected to benefit from reclamation studies and practices that might not otherwise have been available. Therefore, land disturbance from surface mining may be more readily mitigated in the future. Other local disturbances from transportation, conversion, and consumption facilities have not been measured.

AGRICULTURE

Land disturbance under the 1985 Proposed Action would differ in the following ways from land disturbance under the 1979 Preferred Program at the medium production level for 1990: cropland--1 percent less, rangeland--12 percent more, and woodland--13 percent less. These estimates were calculated from figures only for areas with known coal deposits.

WILDLIFE

Direct losses of wildlife habitat resulting from coal production in 1990 at the medium production level would be about 54 percent less under the 1985 Proposed Action than under the 1979 Preferred Program. Losses of individual animals would also be 54 percent lower but could be significantly higher or lower than that figure depending upon the location of the mines. Indirect impacts to wildlife caused by coal-related human population increases would also approach the 54 percent lower figure, assuming a directly proportional relationship.

RECREATION RESOURCES AND WILDERNESS

The greatest impact on recreation resources and wilderness would be the increased or decreased demand for these resources caused by coal-related population changes. Because the location of population changes was unknown for both the 1979 and 1985 analyses, no direct comparison can be made. Population impact comparisons between the 1979 Preferred Program and the 1985 Proposed Action (see the the comparison of socioeconomic impacts) provides an approximation of recreation and wilderness impacts.

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CULTURAL RESOURCES

The size and number of impacts would vary by the amount of surface disturbance and the population increase. At the medium production level in 1990, the 1985 Proposed Action would involve 54 percent less coal production than the 1979 Preferred Program. Consequently, coal-related land disturbance and population increase under the 1985 Proposed Action would be similarly less than under the 1979 Preferred Program. Land disturbance and population increases in specific areas, however, could be significantly higher, depending upon the location of mining.

MINERAL AND PALEONTOLOGICAL RESOURCES

Where development of more than one mineral resource presents a conflict, BLM's policy and industry's preference generally is to sequentially develop the minerals according to an industry-involved agreement. As demand for both resources grows and areas with fewer conflicts are mined out, avoiding conflict areas becomes increasingly difficult. As current mining continues and new areas are opened, more conflicts with other mineral development are expected. Coal production rates under the 1985 Proposed Action in 1990 at the medium production level would be about half of those projected for the 1979 Preferred Program, and fewer future conflicts are expected between coal and other minerals under the Proposed Action than under the Preferred Program.

Impacts to paleontological resources can be directly related to the acreage being disturbed, which in turn depends upon the rate and location of coal production. Overall coal production as projected by this supplemental EIS would be about half of that projected by the 1979 FES, and beneficial and adverse impacts to paleontological resources should be much less for the 1985 Proposed Action than for the 1979 Preferred Program. The reduction of impacts, however, would be less than the percentage drop in coal production because proportionately more of the drop in coal production would occur in regions with less significant paleontological resources.

WATER RESOURCES

Impacts to the hydrologic system are related to the amount of area disturbed and the closeness of the disturbance to major surface and ground water bodies. In a program-level analysis, neither the 1979 FES nor this supplemental EIS can accurately assess the proximity factor because of a lack of specific locations of coal mining. The 1985 Proposed Action would involve about half the coal production of the the 1979 Preferred Program, and thus the 1985 Proposed Action's impacts of sedimentation, total dissolved solids, and ground water disruption would be about half of those of the 1979 Preferred Program.

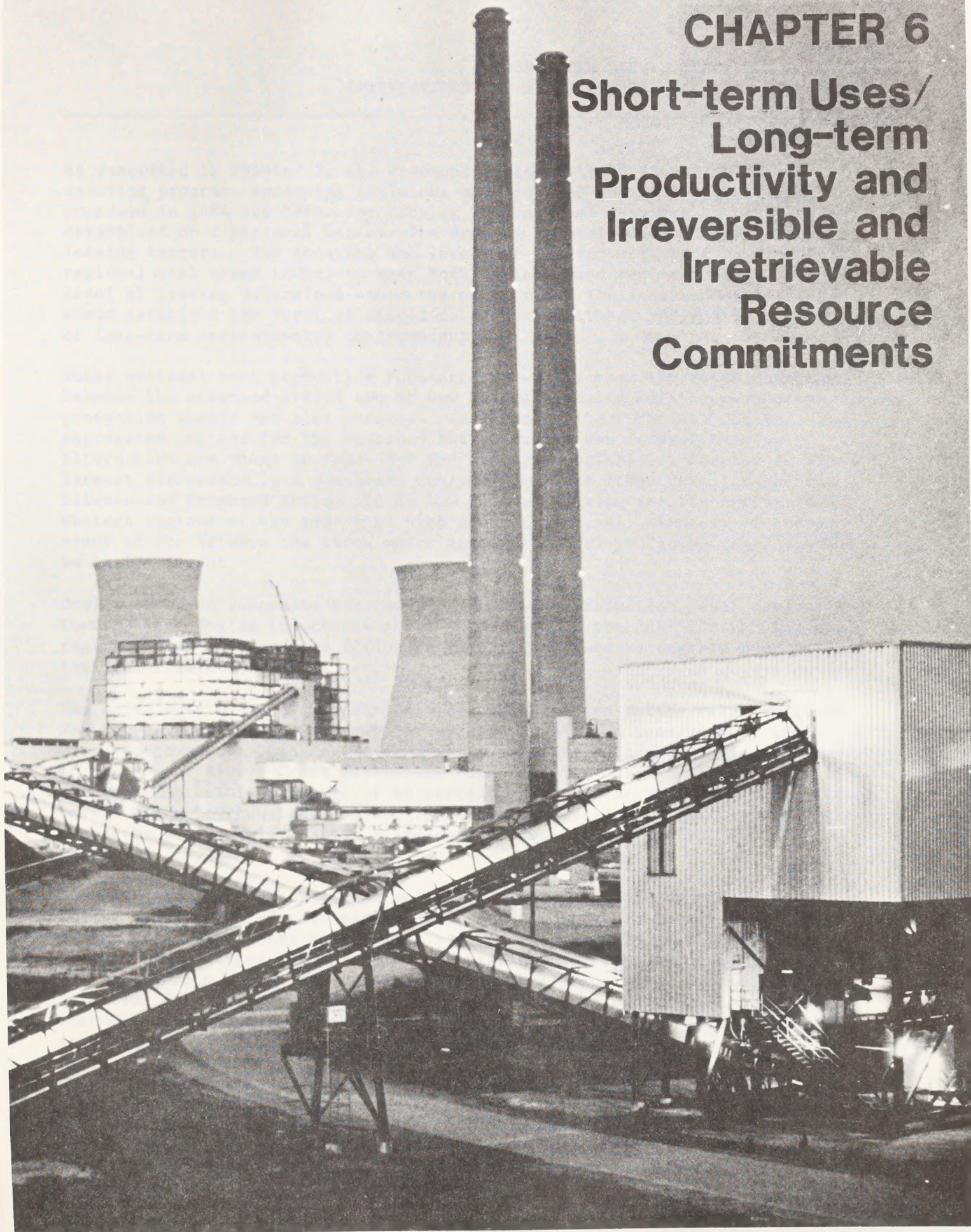
Annual water use projections for all six regions are 81,300 acre-feet in this supplemental EIS and 796,000 acre-feet in the 1979 FES for the Proposed Action/Preferred Program in 1990 at the medium production level. These projections show a 90 percent drop in water use based on a 54 percent drop in coal production. The difference mostly results from the 1979 FES's including water used by powerplants and the supplemental EIS's not reporting on this

COMPARATIVE ANALYSIS

use. This reduction would be greater in regions where mine-mouth use is common (Fort Union) than in regions from which large amounts of coal are exported (Powder River). The remainder of the difference is due to the reduced coal production and different per capita and per ton water use factors.

CHAPTER 6

Short-term Uses/ Long-term Productivity and Irreversible and Irretrievable Resource Commitments



As described in Chapter 2, the Proposed Action calls for continuing the existing program, including revisions made in 1982 and 1983 and changes proposed in 1984 and 1985, for leasing federal coal reserves as the need is determined on a regional basis. The program as revised does not include leasing targets. The location and levels of leasing will be recommended by regional coal teams (RCTs) to meet both national and regional needs. The level of leasing determined under the program and the location of leasing would establish the level of actual resource commitment and possible location of long-term environmental consequences.

Total national coal production forecasts show less than 1 percent change between the Proposed Action and No New Federal Leasing for the respective production levels and time periods. Coal production forecasts for the aggregated regions for the Proposed Action and No New Federal Leasing Alternative are shown in Table 3-1 and discussed briefly in Chapter 3. The largest difference is a 2 million ton/year decrease (less than 1 percent) between the Proposed Action and No New Federal Leasing for the aggregated Western regions at the year 2000 high production level. Impacts of these minor shifts between the three major aggregated coal-producing regions would be insignificant.

Coal production forecasts for the year 2000 high production level project the Powder River Region to produce about 60 percent of the coal for the six coal regions under the Proposed Action or alternatives and to sustain over half of the coal-related impacts.

The major shift in coal production under the Proposed Action relative to No New Federal Leasing would be an increase of 24 million tons/year in the Uinta-Southwestern Utah Region and decreases of 8, 6, and 3 million tons/year in the Powder River, Green River-Hams Fork, and San Juan River regions, respectively. This increase of 60 percent or more over No New Federal Leasing in the Uinta-Southwestern Utah Region would generally be significant for the resources analyzed in Chapter 4 and compared by alternative in Chapter 5.

In addition, some intraregional shifts in production between the Proposed Action and No New Federal Leasing would cause changes in impacts, particularly in the Green River-Hams Fork Region. These shifts would cause greater than proportional changes in employment, population, and some resources because of (1) shifts from subsurface to surface mining, (2) increased severance taxes resulting from shifts to Wyoming (which has a dramatically higher tax rate than Colorado), and (3) changes in air quality caused by increased emissions in Wyoming and reduced emissions in Colorado.

These impacts would be analyzed in more detail and specificity in the resource management plan EISs, regional coal EISs, and other site-specific National Environmental Policy Act (NEPA) compliance procedures that would precede actual mining. Chapter 6 discusses resource commitments that would occur on the basis of assumed levels of coal production given in Chapter 3 and assessed in Chapter 4.

CHAPTER 6

Because of the nature of the program-level analysis in this supplemental EIS, no distinction is made between the Proposed Action and alternatives for related general trade-offs (short-term uses/long-term productivity) and commitment of resources. These items will be analyzed in detail on a regional or local basis in NEPA compliance documents to follow this supplemental EIS (see Chapter 1), when benefits and trade-offs associated with specific resource commitments and alternatives can be measured. For example, regional coal EISs will address projected production levels from specific sites and discuss resource impacts by size, severity, and location. Implementing the Proposed Action or any of the alternatives could result in short-term effects on all resources discussed and long-term effects on all resources except for soils (with successful reclamation), agricultural production affected by mining, air quality, and surface water (Table 6-1). The same resource measures are used for a more general evaluation of trade-offs and resource commitments as were used in Chapter 5. Terms are defined in the section on Commitment of Resources. Health and Safety, Transportation, and Native American Issues are not resources in the same sense as the other resource categories included in Table 6-1 and are not included in the analysis in this chapter.

SHORT-TERM USES/LONG-TERM PRODUCTIVITY

The following trade-offs could result from implementing the Proposed Action or any of the alternatives.

- Increased or continued coal production associated with new leasing could increase employment and related economic activities for selected local communities and maintain community stability, depending upon where specific tracts are leased and developed. On the other hand, communities affected by coal development could be temporarily harmed if housing and support services are inadequate for increased populations.
- Mining would cause some short-term losses of agricultural commodities and forage until land is restored to long-term productivity.
- Diversity of vegetation types would be lost where topographic changes alter microclimates.
- Mining would disrupt grazing and farming, adversely affecting some individual farmers and ranchers over the long term, especially where disturbed land cannot be replaced by alternative tracts to restore operating units. (Compensation to private surface owners would normally offset economic losses.)
- Wildlife forage disturbed during mining would eventually be reclaimed, but reclamation to premining production levels could take several decades, depending upon the area. This disturbance could affect wildlife populations and species composition in certain locales and also affect hunting.

SHORT-TERM USES/LONG-TERM PRODUCTIVITY

TABLE 6-1
SHORT-TERM AND LONG-TERM IMPACTS RESULTING FROM THE
FEDERAL COAL MANAGEMENT PROGRAM

	Irreversible Impacts	Irretrievable Impacts	Short-Term	Long-Term
Socioeconomics	NO	NO	YES	YES
Wildlife ¹				
Terrestrial	YES	YES	YES	YES
Aquatic	YES	YES	YES	YES
Soils and Vegetation	NO	YES	YES	NO ^{2,3}
Agriculture	NO	YES	YES	NO ⁴
Visual Resources	NO	NO	YES	YES
Cultural Resources	YES	YES	YES	YES
Recreation Resources	NO	NO	YES	YES
Wilderness	NO	NO	YES	YES
Air Quality	NO	NO	YES	NO
Water Resources				
Surface Water	NO ⁵	NO ⁵	YES	YES
Ground Water	NO ^{5,6}	NO ^{5,6}	YES	YES
Water Use	NO ⁵	NO ⁵	YES	YES
Minerals	YES	YES	YES	YES
Paleontology	YES	YES	YES	YES

¹These commitments of wildlife resources are spread over the broad spectrum of wildlife species and do not necessarily include threatened or endangered species, which are protected by the Endangered Species Act and would not be either irreversibly or irretrievably harmed by coal development.

²Vegetation would be restored to a productive condition for grazing and long-term productivity. Diversity of vegetation types would be lost where changes in topography have affected microclimates.

³Long-term soil productivity would not be impaired with successful soil reconstruction and reclamation. Soil erosion would be controlled and return to normal rates as revegetation and soil stabilization occur.

⁴Loss of crop and forage production due to mining would be temporary, but, mining would disrupt grazing and cropland farming, creating a long term-impact in certain areas for individual farms and ranches.

⁵Present research and monitoring generally show that the hydrologic balance of coal mine sites can be restored to support the postmining land use and be compatible with the adjacent hydrologic system, but absolute determinations have not been made concerning whether the hydrologic impacts of coal mining in the western United States result in irreversible or irretrievable impacts.

⁶Degraded ground water quality would gradually return to premining conditions, but the process would be slow, perhaps taking hundreds or thousands of years, depending upon the location.

CHAPTER 6

- Human population increases could cause croplands and rangelands to be converted to urban uses, reducing long-term production of agricultural commodities and causing losses of wildlife dependent upon these habitats for food and cover.
- Air quality impacts would constitute a short-term use of air resources that could affect local residents and restrict other nearby developments.
- Visual contrasts created by mining (especially surface mining), facility structures, and construction of access roads and transmission lines could intrude on the natural landscape and impair its visual resources over the long term.
- Cultural resource sites or artifacts could be disturbed by the land disturbance of mining.
- Fossils may be destroyed during mining, but mining may also expose and allow recovery of fossils that could otherwise never be found or studied.
- In some areas, coal mining could degrade the quality of ground water for an extremely long time. This degradation might or might not significantly affect future water users.
- Surface mining could degrade ground water (although the water would gradually return to premining conditions) and could adversely affect surface water by disrupting local watersheds. Subsurface mining could alter surface water conditions by using surface water and causing subsidence.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The Proposed Action, Preference Right and Emergency Leasing, Leasing by Application, and No New Federal Leasing could all irreversibly or irretrievably commit certain natural resources. An irreversible commitment cannot be changed once it occurs; an irretrievably committed resource cannot be recovered or reused. Some resources might be adversely affected only temporarily.

Implementing a federal coal management program under the Proposed Action, the two action alternatives, or No New Federal Leasing could lead to leasing and production that could irreversibly and irretrievably affect terrestrial and aquatic wildlife, cultural resources, minerals, and paleontological resources. Lands covered by project structures would irreversibly lose wildlife forage for the life of the project or as long as the structures are in place. The loss of agricultural land to nonagricultural uses as a result of population increases would be irretrievable.

Because large areas would be disturbed during mining, some cultural and paleontological resources are likely to be destroyed, and others are likely to be discovered. Coal, once used, would not be available for later needs. Methane gas might also be precluded from future use in four regions because of coal mining. Table 6-1 summarizes the resource commitments that would be involved in implementing the Proposed Action and alternatives.

CHAPTER 7

Consultation and Coordination



Chapter 7, Consultation and Coordination, documents BLM's efforts to involve the public in the scoping and review of the Federal Coal Management Program Supplemental EIS. It is divided into six sections. The first section summarizes project scoping and lists organizations and individuals to whom copies of the draft supplemental EIS were sent. The second section discusses procedures for the review of the draft supplemental EIS. The third section summarizes by category the major changes to the draft supplemental EIS. The fourth section presents categorical responses to 13 areas that appeared to generate the most comment. The final two sections present the written and oral comments on the draft supplemental EIS and BLM's responses to these comments.

SUMMARY OF PROJECT SCOPING

Determining the scope or range of actions, alternatives and impacts to be included in this document began in September 1984, but was preceded by a public outreach effort the Department of the Interior considers to be highly relevant to its EIS scoping.

In June 1984, the Department of Interior distributed to interested parties draft materials on how it intended to implement the accepted recommendations of the Commission Fair Market Value Policy for Federal Coal Leasing (Linowes Commission). At the request of those receiving this material, the Department held several meetings in Denver on July 23-24 to receive comments and answer questions with regard to these proposals. A similar process was repeated in November and December 1984 to distribute and obtain comments on the Department's proposals in response to the Office of Technology Assessment report Environmental Protection in the Coal Leasing Program (OTA 1984). These efforts to obtain a measure of public involvement continued with the publication of proposed rulemaking in November 1984 and March 1985. The Department believes the meetings and exchanges of information concerning the revisions to its coal management program constitute an important companion process to project scoping for the supplemental EIS. To a large degree, the shape of the program as described and analyzed in this supplemental EIS as the Proposed Action reflects the process of public comment and analysis that began in June 1984 and has continued through the preparation of the supplemental EIS. The scope for the supplemental EIS, both draft and final, was determined with the benefit of the public response to the parallel coal program review.

METHOD OF SCOPING

The scoping process for the Federal Coal Management Program Supplemental EIS consisted of agency meetings, a published Notice of Intent in the Federal Register to solicit comments, and five public meetings. The Federal Register notice was published on September 4, 1984, and the public meetings were held during the following weeks: on September 25 in Denver, Colorado; October 2 in Washington, D.C.; October 9 in Salt Lake City, Utah; and October 10 in Billings, Montana and Santa Fe, New Mexico.

CONSULTATION AND COORDINATION

With the assistance of federal and state agencies, industry, environmental groups, agricultural protection groups, and individuals, the significant issues and concerns were identified for analysis in the supplemental EIS. Table 7-1 lists organizations and individuals who provided written scoping comments.

Additional oral comments were provided at the scoping meetings by the following individuals:

Denver, Colorado 9/25/84

Mrs. John E. Begay, Montmore, New Mexico
Carolyn Johnson (NRDC)

Billings, Montana 10/9/84

Randolph Nodland, (WORC, DRC)
G.W. Moravek
Bob Tulley (NPRC)
Helen Waller (MAPO)

Santa Fe, New Mexico 10/9/84

Dorothy James
Ronald Goodman
Bert Mescal
Joel Medlin
Bruce Stockton
Russ Butcher

Mamie Lopez
Jimmy Begay
Lenore Begay
Kathy Albrecht
Larry Frank

Washington, D.C 10/2/85

David Masselli (WORC)
David Alversworth (NWF)

RESULTS OF SCOPING

The results of the scoping process and further contributions from agency specialists and managers identified the issues of significant concern for a supplemental EIS on the federal coal management program. The extent to which this supplemental EIS analyzes a particular resource was partially determined by the concerns raised during scoping. The items and concepts suggested for inclusion in the analysis were organized and evaluated to set the framework for the supplemental EIS.

The scoping process focused in particular on the alternatives to, and impacts of, a national coal leasing program. A major consideration in scoping was that this analytical document is an overview statement supplementing the FES on the 1979 program. This supplemental EIS will be augmented or tiered by later EISs on regional leasing proposals, site-specific mining plans/permits, and plant facility construction, and EISs or environmental assessments on lease applications.

TABLE 7-1
LIST OF ORGANIZATIONS AND INDIVIDUALS
PROVIDING WRITTEN SCOPING COMMENTS

Environmental Organizations

1. Sierra Club, Washington, D.C.
Comments delivered by Brooks Yeager at Washington, D.C. Scoping Meeting
2. Sierra Club, Montana Chapter (Daryle Murphy)
3. Sierra Club, Rio Grande Chapter
Comments delivered by Jonathan Teague at Santa Fe, New Mexico, Scoping Meeting
4. Natural Resources Defense Council
5. National Wildlife Federation
Comment read by Karl Gawell at Washington, D.C. Scoping Meeting
6. Environmental Defense Fund, Berkeley, California
7. Western Organization of Resource Councils
8. Northern Plains Resource Council, Billings Chapter
9. Powder River Basin Resource Council, Sheridan, Wyoming
10. Western Organization of Resource Councils, Billings, Montana
11. Dawson Resource Council, Glendive, Montana
12. Southwest Research and Information Center, Albuquerque, New Mexico
(Allison Monroe)

Energy Companies and Trade Associations

1. Mobil
2. Getty Mining Co.
3. Coastal States
4. NERCO
5. National Coal Association/American Mining Congress (joint letter)
6. Western Regional Council

Federal Agencies

1. EPA (Office of External Affairs, Washington, DC)
2. U.S. Fish and Wildlife Service (Albuquerque, New Mexico)

Indian Tribes and Organizations

1. Navajo Nation
2. The Three Affiliated Tribes (Fort Berthold Reservation)

State Governments

1. State of New Mexico, Energy and Minerals Department
2. DeWitt John (speaking for Colorado); Lorin Nielsen (speaking for six western coal-producing states)

Individuals

1. Earl Neller
2. Jennie Blackgoat, et al.
3. Jeff Radford
4. David Masselli (as WORC attorney)
5. Lillian Tenopyr
6. John R. Swanson
7. James Jones

Others

1. Western Network (Santa Fe, New Mexico)

CONSULTATION AND COORDINATION

The following are key issues that emerged during scoping:

- The relationship of the supplemental EIS to ongoing changes to the federal coal management program.
- Extent of the market analysis.
- Assessment of reclamation success on surface-mined western coal lands.
- Impacts of the Department of the Interior's policy to pursue coal exchanges.
- Programmatic alternatives that the Department of the Interior should analyze in its supplemental EIS.

For more information on scoping, see the Decision on the Scope of the Supplement to the 1979 FES for the Federal Coal Management Program in Appendix 6 of the draft supplemental EIS.

PUBLIC REVIEW PROCEDURES

PUBLIC INVOLVEMENT

While preparing the draft supplemental EIS for the federal coal management program, BLM consulted with many federal, state, and local agencies; elected representatives; environmental and citizens groups; industry; and individuals. Many of these individuals and organizations participated in the scoping. The following agencies were requested to review the draft supplemental EIS. A list of others to whom the draft supplemental EIS was sent is on file with Jack Edwards, BLM, Division of EIS Services, 555 Zang Street, 1st Floor East, Lakewood, Colorado 80228. A copy of the final statement is being sent to those who were sent a copy of the draft.

FEDERAL GOVERNMENT AGENCIES

Forest Service (as Cooperating Agency)
Advisory Council on Historic Preservation
Department of Agriculture
 Forest Service
 Soil Conservation Service
Department of the Army
 Corps of Engineers
Department of Energy
Department of the Interior
 Bureau of Indian Affairs
 Bureau of Mines
 Bureau of Reclamation
 Fish and Wildlife Service
 Geological Survey
 Minerals Management Service
 National Park Service
 Office of Surface Mining Reclamation and Enforcement
Department of Transportation
 Federal Highway Administration
Environmental Protection Agency
Interstate Commerce Commission

PUBLIC REVIEW PROCEDURES

STATE A-95 CLEARINGHOUSES

Alabama Office of State Planning and Federal Programs
Colorado Department of Management and Budget
Montana Office of Budget and Planning
New Mexico Department of Finance and Administration
North Dakota State Intergovernmental Clearinghouse
Utah State Planning Coordinator, Office of the Governor
Wyoming State Planning Coordinator, Office of the Governor

LOCAL GOVERNMENTS

Various government agencies within the affected areas.

COPIES OF THE FINAL CAN BE INSPECTED AT THE FOLLOWING BUREAU OF LAND MANAGEMENT OFFICES:

BLM Washington Office
Office of Public Affairs
18th & C Streets, NW, Room 5614
Washington, D.C. 20240

BLM Division of EIS Services
555 Zang Street, 1st Floor East
Lakewood, Colorado 80228

BLM Colorado State Office
Division of Lands and Renewable Resources
2020 Arapahoe Street, 10th Floor
Denver, Colorado 80205

BLM Eastern States Office
Public Room
350 South Pickett Street
Alexandria, Virginia 22304

BLM Montana State Office
Office of Public Affairs
222 North 32nd Street, 1st Floor
P.O. Box 36800
Billings, Montana 59107

BLM New Mexico State Office
Joseph M. Montoya Federal Building
3rd Floor, Room 313
South Federal Place
P.O. Box 1449
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BLM Utah State Office
CFS Financial Center
324 South State, Suite 301
Salt Lake City, Utah 84111-2303

BLM Wyoming State Office
Public Information Office
2525 Warren Avenue, 4th Floor
P.O. Box 1828
Cheyenne, Wyoming 82001

During the review period for the draft supplemental EIS, 53 comment letters were received (Table 7-2, preceding the written comments and responses). Another 41 witnesses testified at draft supplemental EIS hearings held March 18-22, 1985 and March 26, 1985 in five western cities and in Washington, D.C. (Table 7-3, preceding the oral comments and responses). All comments received, even after the response deadline of May 9, 1985, were considered. Letters that were general, vague, or did not contain substantive comments were reviewed but not responded to specifically.

Several BLM offices responded to comments: the Divisions of Solid Mineral Leasing, Operations, Lands, Planning, and EIS Services; the Office of Mineral Policy Analysis and Program Coordination; and the Resource Evaluation and Program Development Staff. Continuing assistance was obtained from the Department of the Interior, Office of the Solicitor and Office of Environmental Project Review.

CONSULTATION AND COORDINATION

All comment letters are printed in this chapter; letters with substantive comments have been coded for response. Comments are marked by a vertical line in the margin and a code. Oral testimony is not reproduced in its entirety, but separate comments from hearings transcripts are included and coded. Responses follow each letter or testimony comment.

Comment responses fall into three groups:

- (1) Comments on the scope or adequacy of the EIS: For comments in which several commenters expressed similar concerns with the scope of this EIS, the Department has organized its responses in categories. This analysis is cross-referenced to the comment letters/hearings testimony. This discussion precedes the comment letters in Chapter 7.
- (2) Comments that raise concerns with the federal coal management program but do not address the accuracy or adequacy of the EIS: Explanations are provided in response to these concerns, but the text is not changed.
- (3) Comments requiring a text change: Changes have been noted in the response, and the text has been changed accordingly.

INCORPORATION OF OTHER DOCUMENTS INTO THIS SUPPLEMENTAL EIS

After publication of the draft supplemental EIS on February 8, 1985, the Department of the Interior released three more documents and one proposed rulemaking for review and comment. The original comment deadline of April 9, 1985 for the supplemental EIS was extended 30 days to accommodate the receipt of responses to these companion proposals. These four items were thereby incorporated as part of this program review and analysis within the comment and review timeframe of the draft supplemental EIS. The additional documents include A Guide to Federal Coal Property Appraisal (BLM 1985e), Production Forecast Technical Report (BLM 1985b), A Review of the Unsuitability Criteria in Federal Coal Leasing (BLM 1985d) and the proposed rulemaking to implement certain responses to the OTA report. The Guide and Report were released upon request in two Federal Register notices, and copies of the Review were mailed to all those who had been provided a copy of the draft supplemental EIS. The proposed rules appeared in the Federal Register on March 15, 1985. The Review and Guide, comments received, and their responses are included, respectively, in Appendixes 1 and 7. (Some comments on the Review were contained in letters commenting on the draft supplemental EIS. Such comments, if not addressed in Chapter 7, are responded to in Appendix 1.) No separate comment letters were received on the Technical Report, but several comments on this report were included in letters addressing the draft supplemental EIS and responded to through revisions to Chapter 3 and Appendix 8 (Background on Coal Production Forecasts).

A few respondents directed comments to discussion drafts and issue papers on coal program changes included in Appendix 6 of the draft supplemental EIS. Most of these proposals had been published or otherwise distributed for public comment as an integral part of the Department of the Interior's efforts to obtain full public review of changes to the federal coal management program suggested in response to reports by the Commission on Fair Market Value Policy for Federal Coal Leasing (Linowes and others 1984) and the Office of Technology Assessment (OTA 1984). These comments have been summarized and analyzed in Appendix 6 (Coal Program Issues Analyses) in this final

MAJOR CHANGES TO THE DRAFT SUPPLEMENTAL EIS

supplemental EIS. Appendix 6 also includes an analysis of comments received on the two separate rulemaking proposals that would implement Linowes Commission and OTA recommendations in the 43 CFR 3400 regulations. The individual issue analyses will be among the documents that will guide the Department of the Interior's decisionmaking process that will take place at the end of the 30-day review period on this final supplemental EIS.

MAJOR CHANGES TO THE DRAFT SUPPLEMENTAL EIS

In consideration of the public comments received on the draft supplemental EIS and its companion documents mentioned above, the Department has revised the text as noted in the letter-by-letter response section of this chapter. Other structural changes have also been made in this final supplemental EIS. These changes reflect the Department's response to major issues raised by commenters on the draft supplemental EIS. Moreover, readability and clarity have been improved generally through the editing process on the draft supplemental EIS.

The following structural changes have been made in response to comments.

PROGRAM DESCRIPTION

Several commenters observed that the description of the ongoing coal management program (Proposed Action) failed to portray in enough detail the changes under way to adopt recommendations of the Linowes Commission and Office of Technology Assessment. Also criticized was the manner in which individual elements of the program undergoing review were printed in reduced format in Appendix 6 of the draft supplemental EIS without adequate cross-referencing to the program description in the Proposed Action section of Chapter 2. Commenters felt that readers could not easily understand where and how the specific program component proposals fit into the overall coal management program. Finally, several commenters noted that it was unclear how three of the four post-draft supplemental EIS review documents (Review of Unsuitability Criteria, March 15, 1985 proposed rulemaking, and Guide to Federal Coal Property Appraisal) related to the Proposed Action of the draft supplemental EIS.

In response to these comments, BLM has extensively revised the Proposed Action section in Chapter 2. Chapter 2 now consists of a more detailed and comprehensive description of how the coal management program would operate under implementation of the changes proposed in the ongoing program review, relating mainly to the OTA and Linowes Commission report recommendations.

The individual program review elements were presented as staff discussion drafts in Appendix 6 of the draft supplemental EIS. The issues discussed in these drafts are now addressed in issue papers, reflecting BLM's analysis of public comments. (See Appendix 6 of this final EIS.) These issue analyses have been organized into stages of the coal management planning and lease sale cycle to enhance their clarity and have been written in digest form. They state options that might be considered for decision by Secretary of the Interior Hodel at the end of the 30-day review period for this final supplemental EIS. For the purpose of describing the Proposed Action, an assumption is made as to which option will be adopted for each issue. This selection in no way limits or restricts the Secretary of the Interior's ability to formulate the program as he sees best. The final supplemental EIS, the issue analyses in Appendix 6, and other documentation will accompany the Secretarial Issue Document for the federal coal management program.

CONSULTATION AND COORDINATION

UNSUITABILITY CRITERIA

Because of the many responses to the Review of Unsuitability Criteria in Federal Coal Leasing, Chapter 1 of this final supplemental EIS includes a section explaining the background of applying unsuitability criteria in the federal coal management program. The conclusions in the Unsuitability Review are also summarized in Chapter 1. In Chapter 2, the section on unsuitability criteria under the Proposed Action has been expanded.

The Unsuitability Review is reprinted in this final supplemental EIS in Appendix 1 with comment letters and responses. BLM will prepare an analysis and options for Secretarial decision on the basis of the final supplemental EIS and Appendix 1.

APPRAISAL GUIDE

The revised Guide to Federal Coal Property Appraisal is summarized in Chapter 2 and printed as Appendix 7 with comment letters and responses. An issue analysis is also included in Appendix 6.

COAL PRODUCTION FORECASTS

Chapter 3 of the final supplemental EIS contains updated forecasts of coal production for 1990, 1995, and 2000. As a means of comparison, Chapter 3 also tabulates recent forecasts by the Department of Energy in its 1984 Annual Energy Outlook (DOE/EIA 1985b) and forecasts of leading nongovernmental organizations. Effects of enforcing the diligence provisions of Section 3 of the Mineral Leasing Act have been incorporated into the coal supply analysis for Chapter 3.

EXCHANGES

Chapter 1 expands the discussion of exchanges, reflects comments on the Department's fee coal exchange policies, and explains in more detail the Department's position on this issue. Proposed regulations, guidance documents, and the proposed fee exchange policy are included in Appendix 9.

OTHER APPENDIXES

The final supplemental EIS also includes a revised and updated technical appendix on coal production forecasts (Appendix 8), and a revised and updated report on surface mine reclamation in the western states (Appendix 5). An updated (September 1985) environmental assessment for the changes proposed in response to the Linowes Commission report is included in Appendix 10.

CATEGORICAL ANALYSIS OF COMMENTS

In summarizing the key points raised by commenters, the Department of the Interior has grouped representative comments on the draft supplemental EIS into several categories. A similar approach was used in the 1979 FES. In this supplemental EIS, substantive comments have also been analyzed in the individual comment letters section. The following categories cover the major comments received on the draft supplemental EIS:

CATEGORICAL ANALYSIS OF COMMENTS

1. Adequacy of draft supplemental EIS under the National Environmental Policy Act of 1969 (several issues),
2. Leasing levels,
3. Regulatory procedures versus guidance,
4. Data adequacy,
5. Science advisors,
6. Regional coal teams,
7. Leasing by application,
8. Preference right lease applications (PRLAs),
9. Diligence and Section 3 guidelines,
10. Linowes Commission recommendations,
11. Land use planning,
12. Exchanges,
13. Unsuitability criteria.

CATEGORY 1: ADEQUACY OF THE SUPPLEMENTAL EIS

COMMENT: Several commenters believed that the scope of this supplemental EIS should have been much broader. These and other commenters also expressed concern with what they perceived to be harmful changes to the 1979 program through the adoption of regulations in 1982 and a shift in the program's emphasis that, they perceived, could undermine environmental protection and socioeconomic mitigation. They believed that the supplemental EIS is inadequate in the choice of program alternatives for analysis, citing specifically the lack of an alternative that would tie the resumption of regional federal coal leasing to a proven unfilled demand for coal production. The 1979 coal program was described as establishing a policy of leasing an amount of coal to meet projected demand for coal production and as being radically changed by 1982 regulatory amendments establishing a policy of leasing coal to meet industry demand for coal reserves.

RESPONSE: The basic structure of the 1979 program has not changed, consisting now as it did then of land use planning, activity planning, NEPA analysis, lease sales, and postsale determination of fair market value. The Secretary of the Interior can rely on analyzing market trends to limit leasing under the Proposed Action, as he could under the 1979 regulations governing that program. In fact, the Department believes that basic concepts underlying the 1979 program are expanded and extended by the program configuration described for the Proposed Action.

CONSULTATION AND COORDINATION

The proposed alternative to link the resumption of leasing to proven unfilled demand for coal production does not differ enough from the Proposed Action to allow meaningful analysis. The characterization of the 1979 and 1982 leasing level policies as different programs has been set forth in court in NRDC vs. Burford, which is summarized in this final supplemental EIS (see Chapter 1, Litigation). The Department rejects this characterization, however, and finds that leasing for production demand is not a reasonable alternative for the following reasons.

As other commenters have noted (see comment letter 35), mining coal is not simply a matter of finding a user who needs a certain amount of coal and then competing for the contract. Coal users demand varying qualities in the coal that they can use. Each user has minimum specifications, depending on the technology in the use facility, for such factors in the coal as heat content, ash, sulfur, and moisture. Thus, a producer may have more than enough coal to compete when sales contract opportunities arise, each contract proposal calling for coal with differing specifications and timing and location requirements. But if none of that coal meets user specifications, none of that producer's coal will be sold, and none will be mined. The Department recognizes, of course, that by leasing federal coal to provide a varied reserve base, impacts will occur if the leasing results in coal being produced that would not have been leased under a strict "production demand" policy.

Second, as a comparison of production demand set out in the 1979 FES with those in this supplemental EIS clearly shows, forecasting production is not an exact science. In their comments on the Department's use of leasing targets in 1980, the Department of Energy and Council on Wage and Price Stability specifically rejected ton-for-ton match-up of reserves leased for projected unfilled demand.

Third, the 1979 program was never intended to follow such a rigid formula. Secretary of the Interior Andrus did establish "preliminary" leasing targets based on a production demand formula in his 1979 decisions of the coal program (USDI 1979a). The 1979 regulations, however, included a variety of considerations by which final leasing targets and decisions could be adjusted over (or under) not only preliminary leasing targets but also projected production demand, e.g., 43 CFR 3420.3-2(e)(2), 3420.3-3(b) (1981). Despite the concern for having a coal reserve base that is varied in lessees and in quality, the main change in the 1982 regulations, as carried forward in the Proposed Action of this supplemental EIS, was a de-emphasis on the production demand projections by making these projections only one of several factors to be considered in leasing level decisions.

Fourth, the industry demand for reserves, the projected production demand, and other factors are part of the leasing level process, not the leasing decision itself. The leasing level forms the basis for the proposed action in each regional sale EIS. Although the Secretary of the Interior can be expected to pay special recognition to the leasing level, he is not restricted by it and can adjust the amount of coal offered for leasing within the ranges analyzed in the supplemental EIS.

CATEGORICAL ANALYSIS OF COMMENTS

Fifth, this supplemental EIS is an analysis of the basic national program, mainly the mechanism and procedures for leasing. No coal can be proposed for leasing until a land use plan and EIS have been completed, a need for leasing is determined, and the impact of offering various amounts at lease sales is analyzed in a regional coal sale EIS.

Finally, the ultimate outcome of the commenters' preferred leasing policy would be to ignore the reality of the marketplace as a factor in leasing decisions. Coal leasing requires an up-front expenditure (bonus), unlike some of the rank speculation that led to the 1973 leasing moratorium. Fifty percent of this bonus (plus any royalty revenues) is distributed to the state in which the coal is located. Although demand for production will ultimately determine what coal is mined, leasing coal today provides needed financial aid to the states to help offset impacts from current mining and possibly from future mining. If the industry is more optimistic or has different needs than projected production demand would otherwise reveal, excluding competitive leasing would needlessly deprive the states of an important potential revenue source.

COMMENT: The supplemental EIS "fails to relate the program to the amount of coal under lease," citing NRDC v. Hughes, 437 F. Supp. 981 (D.D.C. 1977). NEPA requires the Department to address the question of need, if any, for more federal coal to be leased, again quoting the Hughes decision. The question of need for leasing is inextricably linked to the amount of coal under lease.

RESPONSE: The Hughes decision forbade implementing the Department's effort to establish a coal program (referred to as EMARS) after the 1973 moratorium. The principles set forth by the court in Hughes formed one of the legal foundations of the 1979 federal coal program and FES. Those principles are carried forward and followed in this supplemental EIS.

The commenter equates the EMARS coal program and EIS with the Proposed Action in the supplemental EIS. The main holding of the Hughes decision was that the EMARS programmatic EIS was inadequate because it failed to examine whether a new program should be undertaken at all, that is, the EIS lacked a no-action alternative (Hughes at 989). The Department of the Interior defended the EMARS program by arguing that federal coal must be leased. The plaintiffs countered by citing the amount of coal then under lease, which the court found persuasive.

Simply put, the supplemental EIS contains a no-action alternative that is thoroughly analyzed in all descriptions of comparative impacts. Moreover, this supplemental EIS does not assume that federal coal must be leased as part of the Proposed Action. The 1979 program, as carried forward in the Proposed Action, has a crucial element that the EMARS program did not have--a continuing analysis of whether a need exists to lease federal coal at any given time. This dimension is documented throughout the deliberations of regional coal teams, its analytical basis supported by long range, regional, and tract market studies made available to the public on the need for coal leasing.

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The commenters seem to ask that the supplemental EIS examine the need to lease coal, rather than, as the Hughes court decreed, whether a program should be undertaken at all. The Department believes that the commenters' confusion results from focusing on the discussion of the court in Hughes (described above) of the Department's defense that new leasing is required, a position that was later analyzed and upheld in the 1979 FES. As in the 1979 FES, this supplemental EIS contains an analysis of a no-action alternative. Unlike the 1979 FES, which contemplated an immediate commencement of activity planning based on the need for leasing, this supplemental EIS does not analyze the need to lease specific amounts of coal. Rather, it analyzes a Proposed Action that contemplates determining the need for leasing as part of the normal operation of the coal program.

COMMENT: Several commenters objected to what they felt was the Department of the Interior's "piecemeal" approach in carrying out environmental analysis for its coal program review (Linowes and OTA proposed changes), developing a programmatic supplemental EIS, and drafting regulations. In particular, concern was expressed that coal program changes would be cemented in place through final rulemaking and BLM- or Department-level decisionmaking before the final supplemental EIS was finished and that the programmatic supplemental EIS is simply a meaningless exercise to ratify decisions already made.

RESPONSE: The Department believes that the complexity of the federal coal management program dictates the use of a comprehensive yet understandable approach that will bring together in this final supplemental EIS all the parts of the 1984-85 federal coal management program review.

Secretary of the Interior Clark's August 30, 1984, decision that the Department would prepare a supplement to the 1979 final environmental statement (FES) for the federal coal management program was based on two needs. First, the conditions forming the basis of the analysis in the 1979 FES (BLM 1979a) could have changed, particularly with regard to market factors that might affect the demand for federal coal leases. Second, in consultation with Congress, the Department was considering changes to the coal program. The Proposed Action in this supplemental EIS was to be the continuation of the 1979 program (the Preferred Alternative as adopted by Secretary Andrus) as changed since 1979 by later rulemaking and by recommendations proposed for adoption from reports by the Linowes Commission and the Office of Technology Assessment.

When Secretary Clark announced the decision to prepare a supplemental EIS, BLM was reviewing public comments on Linowes Commission recommendations it had proposed to adopt. Previously, on June 29, 1984, BLM had concluded in a Finding of No Significant Impact (BLM 1984a), since updated (Appendix 10), that implementing Linowes Commission recommendations would have no significant environmental consequences. These recommendations relate to coal lease sales procedures and appraisal techniques for federal coal properties and as such would not be expected to have any impacts.

The Department intended to implement some changes to final regulations as well as procedures that would formally adopt the Linowes Commission's recommendations in the spring of 1985 on a course separate from the completion schedule of the supplemental EIS. Similarly, the public review, environmental analysis, and implementation schedules for the OTA report's recommendations

CATEGORICAL ANALYSIS OF COMMENTS

were first established without regard to the completion date of the supplemental EIS. Because the existence of three separate completion schedules raised concern during the comment period on the scoping of this supplemental EIS, the Acting Assistant Secretary of the Interior for Land and Mineral Resources made the following decisions on December 21, 1984:

1. Final rulemaking related to Linowes Commission and OTA report recommendations would be withheld until after the final supplemental EIS is completed.
2. No final nonregulatory Secretarial decisions would be taken on the coal program before the final supplemental EIS is published.
3. The Department of the Interior would accept comments on the existing and proposed alternative coal programs as a whole in addition to comments on the individual program revisions developed in response to the Linowes Commission and OTA reports.

The draft supplemental EIS included in Appendix 6 those proposed coal program changes that had already been distributed for comment to selected groups with an interest in the coal management program and to the public. After the draft supplemental EIS was released on February 8, 1985, four more documents were either mailed to reviewers of the draft supplemental EIS or released through publication of notices in the Federal Register. (See earlier discussion in this chapter.) For purposes of environmental analysis in this EIS, it was assumed that all proposals within Appendix 6 of the DEIS and the four items released after the draft supplemental EIS was printed were covered by the supplemental EIS. By integrating these documents into the review timeframe for the draft supplemental EIS, the Department sought to present the public with an opportunity to study and comment upon all major aspects of the federal coal management program undergoing review and revision. These proposals now appear in Appendix 6 as issue analyses for Secretarial decision.

CATEGORY 2: LEASING LEVELS

COMMENT: The Department of the Interior must adopt an explicit, rational policy to guide the setting of leasing levels and must also estimate in the supplemental EIS what those levels will be to be able to identify the program's impacts.

RESPONSE: This comment would have the Department perform the role of the regional coal teams. As noted above, this supplemental EIS is not designed to determine the need to lease coal but rather the need to maintain a coal program. If the impact analysis were based on leasing level estimates, it would soon be outdated. The commenter would have BLM analyze the need for a program on the basis of need for leasing, which the Proposed Action recognizes must be reexamined several times before a lease sale is held.

The leasing level for each round of leasing in a region is a broad range of coal tonnage that serves as the basis for analysis in the regional coal lease sale EIS. Each regional coal team's (RCT) recommendation of a leasing level is derived in part from the regional market analysis paper prepared jointly by the RCT staff and BLM's Washington Office. This regional market analysis evaluates, among other factors, trends in coal supply and demand. The RCT

CONSULTATION AND COORDINATION

weighs the coal production forecasts in this paper with public comments and other balancing objectives (see Chapter 2 discussion of leasing levels) in preparing its recommendation of a leasing level. The objective of this procedure is to ensure that the RCT and the Department have documented and are fully aware of market conditions when the Secretary makes the leasing level decision. This approach is faithful to the recommendations in Chapter 3 of the Linowes Commission Report (Linowes and others 1984).

The EIS does estimate coal production and impacts on a national and regional basis under different production levels and program alternatives through the year 2000. Furthermore, as the coal production forecasts in Chapter 3 show, at most production levels through the year 2000 federal leasing will have slight national impacts because existing supplies appear to meet or exceed reasonable estimates of future demand. This conclusion represents a change from the conclusions in 1979 but should be of little surprise to those who follow trends in western and national coal markets. For this reason--to incorporate the new future demand forecasts--the Department committed itself to supplementing the 1979 FES in August 1984.

COMMENT: In determining a leasing level recommendation, RCTs should follow industry input as well as market studies. In establishing a proposed action for each regional EIS, the RCT should consider most expressions of leasing interest that are valid.

RESPONSE: As spelled out in the Department's regional market analysis procedures (Chapter 2), industry representatives and the public are given the chance to comment on leasing level alternatives for consideration by the RCTs. Specifically, industry expressions of interest constitute one of the six methodologies in the regional market analysis used in setting leasing levels. The RCTs would be expected to review and consider all pertinent information and suggestions received.

COMMENT: Many Wyoming mines are producing at a fraction of their capacity. Contracts are being canceled, and mines are closing due to the slump in western coal markets. The Department should recognize these market conditions and also consider the harm to wildlife of permitting new mines to open.

RESPONSE: The RCTs will weigh these factors, among others, in analyzing market conditions and recommending leasing levels, in ranking tracts, and in recommending a final selection of tracts for leasing. If the scenario given by this commenter prevailed, an RCT would be expected to assign a lower ranking factor to new production tracts.

CATEGORY 3: REGULATIONS VERSUS GUIDANCE

COMMENT: Many proposals being implemented by the Department in its response to the OTA and Linowes Commission reports are scheduled for internal distribution as guidelines, field instructions, or technical manuals rather than regulations. This approach will prevent the Department from being held accountable for its actions and will not allow legal challenge by the states, the public, or industry if BLM fails to follow the prescribed procedures. Unlike regulations, guidance documents such as instructional memorandums can be changed without public notice, comment, or review.

CATEGORICAL ANALYSIS OF COMMENTS

RESPONSE: Some limited regulatory changes may be proposed, in addition to those previously proposed, as needed to implement decisions on the choice and structure of a coal program from among the alternatives described in the final supplemental EIS. In general, however, a large segment of any agency's implementation activities is covered by guidelines and field instructions, as agency employees seek to implement the general policy requirements of statutes and regulations in a manner consistent with the particular circumstances in each situation. To attempt to reflect each situation in a seemingly endless array of specific regulations could unacceptably increase administrative costs.

Although guidance, instruction memoranda, and manuals can be changed without public review, all agency decisions can be challenged in court. The Department, however, is committed to policies allowing adequate opportunity for public comment on all major changes to the coal program and fully considering all comments received.

CATEGORY 4: DATA ADEQUACY

COMMENT: No regulations are being considered for assuring the adequacy of data used for making coal land use planning and leasing decisions, and not enough time and money are being spent to improve resource inventory and land use planning. The Department has not addressed OTA's finding that deferring decisions to the mine plan stage because of inadequate data for earlier decisionmaking weakens the leasing process.

RESPONSE: The Department believes that standards for data adequacy are better than regulations because of regional and local differences in data needs for coal and noncoal resources. As described in the Proposed Action, Chapter 2, regional coal teams will become the focal point for developing regional data adequacy standards with the assistance of science advisors and a coal data review council. The Department will provide guidance on developing data adequacy standards. The Department believes that BLM has budgeted enough funds to conduct inventories at an appropriate level of specificity but recognizes that in some cases (see Unsuitability Criteria Review and comments analysis in Appendix 1) it may be more cost-effective to defer certain decisions until the mine permit application has been submitted to the Office of Surface Mining Reclamation and Enforcement or the state regulatory authority. Adequacy of data is a judgment factor; data bases are never complete. At issue in the coal program is the adequacy to make sound decisions with an acceptable degree of certainty as to probable effects.

COMMENT: The Department should have an EIS alternative that would allow no renewal of regional leasing until accurate baseline data is collected.

RESPONSE: The Department has committed itself to a procedure that would ensure the adequacy of coal and noncoal resource data at decision points throughout the coal management process. Data standards and guidelines will provide the yardstick to assure that data is adequate for lands to be further considered for leasing. Data adequacy checkpoints are discussed under a separate heading in Chapter 2.

COMMENT: BLM should provide each regional coal team (RCT) with potential subjects for data adequacy standards, but RCTs should prepare the standards, solicit public comment, and publish them for each region.

CONSULTATION AND COORDINATION

RESPONSE: BLM generally agrees with this approach and the findings by OTA and the Linowes Commission with regard to the desirability of decentralizing leasing activities to field teams wherever possible. See Chapter 2 for a discussion of data adequacy.

CATEGORY 5: SCIENCE ADVISORS

COMMENT: A U.S. Fish and Wildlife Service (FWS) representative should be appointed as a science advisor to RCTs in all cases.

RESPONSE: For regions with significant wildlife consideration, a science advisor for renewable resources will likely be chosen from among the FWS, affiliated fish and wildlife cooperative units, state fish and game commissions, and universities.

CATEGORY 6: REGIONAL COAL TEAMS

COMMENT: The Proposed Action fails to reassure the public that RCTs will be held accountable for important new responsibilities. Delegating leasing level decisions to RCTs or individual governors is of questionable legality, as it appears to constitute an impermissible abdication of the Secretary of the Interior's responsibilities. See 30 U.S.C. 6, 181 as amended and 43 U.S.C. 6, 1345(s).

RESPONSE: RCTs are bodies chartered under the Federal Advisory Committee Act to conduct regional coal activity planning under standards set by the Department of the Interior. The RCTs are obligated to follow regulations and procedures established by the Department, although RCTs may recommend changes to these procedures. The RCTs will be required to document their actions and recommendations to ensure that proper procedures are followed. A representative of BLM's Washington Office will serve as a nonvoting member of the RCTs, both to advise the RCTs on the Department's requirements and concerns and to report to the Department on the RCTs' activities. This representative will serve as a liaison between the Department and the RCTs, providing a flow of information in both directions.

Although the RCT recommendations on leasing levels and regional lease sale schedules are treated as rebuttable presumptions, the Secretary may overturn these recommendations if they conflict with a governor's recommendations or with national interest considerations. Making recommendations rebuttable presumptions gives them great weight with the Secretary but does not delegate decisionmaking to the RCTs.

The Department of the Interior will make every effort to assure that RCT meetings provide adequate opportunity for public comment and, through proposed regulatory changes, is seeking to build in adequate time for public review and comment on RCT products.

CATEGORICAL ANALYSIS OF COMMENTS

CATEGORY 7: LEASING BY APPLICATION

COMMENT: For coal regions of lesser interest where a leasing by application approach would be preferred, RCT duties and responsibilities should be outlined by regulations. Application leasing, as suggested by BLM state directors, would have merit in regions such as Fort Union where industry demand is relatively low.

RESPONSE: Current regulations do not prohibit the use of the RCT concept outside designated federal coal production regions. Provisions dealing with RCT activities in regions that convert to application leasing may be incorporated within amended RCT charters at the discretion of each RCT, subject to concurrence by the Secretary.

CATEGORY 8: PREFERENCE RIGHT LEASE APPLICATIONS (PRLA'S)

COMMENT: Contrary to the draft supplemental EIS assertion that issuing preference right leases is not discretionary, the Secretary does have the authority to seek exchange and impose protective stipulations upon or condemn areas under preference right lease application and seek compensation from Congress. See NRDC v. Berklund et al., (699 F. 2d 533).

RESPONSE: In NRDC v. Berklund (609 F. 2d 553) the court ruled that the Secretary of the Interior has no right to refuse to issue a coal preference right lease if an applicant shows a discovery of coal in commercial quantities. The court also ruled that mining costs incurred to comply with environmental laws have to be considered as part of the commercial quantities determination. The Department of the Interior must enforce this ruling in processing coal PRLAs. Although the Secretary can seek such alternatives to lease issuance as exchange or purchase of the lease rights or issuance of certificates of bidding rights, these alternatives must be authorized by Congress, or in the case of bidding rights, agreed to by the prospective lessee. Without such authorization, the Secretary of the Interior has no choice but to issue leases for application that meet the commercial quantities test.

CATEGORY 9: SECTION 7 AND SECTION 3 DILIGENCE PROVISIONS OF THE MINERAL LEASING ACT

COMMENT: This supplemental EIS considers no alternative to the 1982 regulation concerning diligent development, as the new program retains these provisions in the Proposed Action. The 1982 definition of commercial quantities for pre-1976 leases--1 percent of lease reserves--is invalid. The supplemental EIS also fails to consider the impacts of 1982 changes in the regulations relating to diligent development.

RESPONSE: The environmental impacts of the 1982 regulatory change were analyzed in the 1982 environmental assessment for this and other rulemaking changes to 43 CFR 3400 (BLM 1982d). The Department's position is that this change increases the enforceability of the diligence requirements for pre-Federal Coal Leasing Amendments Act (FCLAA) leases. The 1982 regulation changes are under litigation (see Chapter 1, Litigation section).

CONSULTATION AND COORDINATION

COMMENT: The EIS fails to analyze the environmental impact of proposed guidelines for enforcing Section 3 of the Mineral Leasing Act. The guidelines themselves do nothing to discourage speculation but instead discourage production from existing leases.

RESPONSE: This supplemental EIS's central theme is the program alternatives for reviewing and offering coal lands for lease sale. Nonetheless, the analysis in Chapter 3 that was used to derive the critical coal production forecasts did factor in an assessment of the likelihood of production from pre-FCLAA leases affected by enforcing the Section 3 guidelines.

CATEGORY 10: LINOWES COMMISSION REPORT

COMMENT: The Department's proposed program fails to implement key proposals of the Linowes Commission Report regarding limitation of leasing levels and improving appraisal techniques.

RESPONSE: The description in the final supplemental EIS description of the Proposed Action contains a clearer discussion of the use of three separate phases of market analysis as a guidance for the Department of the Interior in (1) deciding whether to begin regional activity planning and (2) selecting tracts to be offered at lease sales. The main purpose of market analysis is to ensure that market conditions are considered at key points in activity planning and that decisions relating to leasing levels and the amount of coal offered at lease sales are made with awareness of these conditions.

Appendix 7 of this final supplemental EIS contains the Department's current Guide to Federal Coal Property Appraisal, which is also summarized under the Proposed Action in Chapter 2. The Guide reflects the benefits of several stages of public review and comments and documents for the public the appraisal techniques to be used in valuing coal lease tracts and other federal coal properties. Linowes Commission recommendations concerning appraisal methodologies and policies are addressed in the Appraisal Guide.

CATEGORY 11: LAND USE PLANS

COMMENT: Nine years have passed since the enactment of the Federal Land Policy and Management Act of 1976 (FLPMA). The Department should comply with this law and the recommendations of OTA by issuing regulations to prohibit leasing outside areas covered by resource management plans (RMPs), as opposed to management framework plans (MFPs) or plan amendments.

RESPONSE: The Department of the Interior believes that MFPs that have been updated to comply with FLPMA are adequate to support coal-related land use decisions. Nevertheless, the Department recognizes the need to expeditiously make the transition from MFPs to RMPs. The transition will be achieved through a process that first commits BLM to develop RMPs before new rounds of regional coal activity planning begin. Whatever the form of the planning document, each regional coal team (RCT) will scrutinize it to assure that it is sufficient for the RCT to proceed to delineate tracts, establish leasing levels, conduct environmental analysis, and eventually make sale recommendations maintaining adequate consideration and protection for other resources.

CATEGORICAL ANALYSIS OF COMMENTS

CATEGORY 12: EXCHANGES

COMMENT: The draft supplemental EIS was seriously deficient as a decision document and a programmatic review because it omitted an in-depth discussion of exchanges. The Department's exchange policy should be explained; regulations are needed to codify Department procedures for conducting fee coal exchanges.

RESPONSE: An expanded section on exchanges is included in Chapter 1 of the final supplemental EIS. This section explains the proposed fee exchange policy and provides more information on how exchanges are proposed and public comments considered. Appendix 9 contains a proposed policy statement, guidance documents, and draft rules affecting exchanges.

COMMENT: Some commenters believed that fee coal exchange is a major departmental program that would allow federal coal to be transferred and mined without being subject to the basic environmental screens required in the coal leasing program, including the application of unsuitability criteria (see Chapter 2). Concerns were also expressed about (1) impacts of fee coal exchanges on competitive and cooperative leasing, (2) surface owner consent for coal acquired by the United States in an exchange, (3) opportunity for early public comment on individual fee coal exchanges, (4) antitrust consequences of fee coal exchanges, and (5) how equal value will be determined for fee coal exchanges. Another issue is under litigation: whether fee coal exchanges with land grant railroads or their affiliates violates Section 2(c) of the Mineral Leasing Act.

RESPONSE: Fee coal exchanges do not constitute a Department of the Interior program to dispose of coal in lieu of the coal leasing program. They are considered on a case-by-case basis with much opportunity for public comment before a final determination is made. The exchange must be in the public interest. Proposed regulations have been prepared codifying this public involvement in 43 CFR 2200. This supplemental EIS does not analyze BLM's fee coal exchange policy because one cannot now predict which ongoing exchanges will be consummated, what new applications for fee coal exchanges will be submitted, and what effects these future exchanges will have on the need to lease federal coal.

Past exchanges of fee coal and those under current consideration have been proposed by nonfederal parties. The Department of the Interior does not intend to solicit or propose fee coal exchanges. More guidance is being developed that better involve the public and aid BLM in processing those fee coal exchanges proposals that may be received from the nonfederal sector.

The district court has recently issued its decision in one of the exchange cases holding that section 2(c) does not affect fee coal exchanges under FLPMA (NCA vs. Hodel, Civil No. 83-2985 (D.D.C. August 28, 1985)).

CATEGORY 13: UNSUITABILITY CRITERIA

COMMENTS: The unsuitability criteria in 43 CFR 3461 that are used to screen lands during land use planning do not adequately protect wildlife and other resources. More criteria should be adopted to assure reclaimability; protect wetlands, sole source drinking water supplies, and Class I clean air areas; and review sites eligible for inclusion on the National Register of Historic Places. Buffer zones around publicly owned parks should be declared unsuitable to prevent degradation of these resources.

RESPONSE: Applying of the 20 unsuitability criteria is only one step in the BLM land use planning process for eliminating lands with environmentally sensitive values from further consideration for coal leasing. The sensitive values proposed in the comment for addition to the unsuitability criteria (reclaimability, sole course aquifers, Class I air quality areas, and wetlands) often require extensive and detailed analysis to ensure that the value is protected. That level of analysis is not appropriate to unsuitability assessment but may be more appropriate to the multiple use trade-off step of planning or site-specific/regional NEPA analysis. Often, the level of detail required to analyze impacts to these values with any degree of certainty is not available until permit application packages are submitted to the regulatory authority. Nonetheless, the decision document that will be prepared for the Secretary outlining the choice and structure of a federal coal management program will have adopting more unsuitability criteria as an option for his consideration. The additional criteria, should the Secretary decide in favor of any, would be proposed for comment through a formal rulemaking. Comments and responses concerning the Review of Unsuitability Criteria in Federal Coal Leasing are included in Appendix 1.

COMMENT: The supplemental EIS should be rewritten to better explain the multiple resource trade-off screen used in land use planning.

RESPONSE: The discussion under the Proposed Action in Chapter 2 now includes a section on unsuitability criteria and an explanation of proposed steps the Department is taking to document its multiple resource trade-offs analysis.

COMMENTS AND RESPONSES

TABLE 7-2
COMMENT LETTERS

Comment Number	Commenter	Representing
1*	Bill Robinson	Office of Managment and Budget
2*	H. Agnes Zipperian	Montana State Clearinghouse
3	David A. Breternitz	Mesa Verde Research Center
4	William A. Vaughan	U.S. Department of Energy
5	John Paul Fox	Humane Society of Utah
6	E.C. Sumner	Shell Mining Company
7	Alois B. Spielman	North Dakota State Historical Society
8*	William Cochran	USDI, Bureau of Mines
9	Jim Lewis	Self
10*	James C. Overbay	USDA, Forest Service, Region 3
11	Richard D. Gorton	Omaha District, Army Corps of Engineers
12	Lucy Airsman	Sierra Club, Utah Chapter
13	Carol J. Condie	Quivira Research Center
14	James V. Lewis	Self
15	Roland A. Goodman	Sangre de Cristo Audubon Society
16	Earl Neller	Self
17*	Edward W. Burris	Self
18	Roger M. Blouch	Delta County, Colorado, Board of Commissioners
19	Paul E. Frye	Navajo Tribal Council
20	Lillian Tenopyr	Self
21	W. Carter Grinstead Jr.	Exxon Coal USA, Inc.
22*	John and Bessie Bunion and children	Selves

*Letters without substantive comments to which BLM has not responded in writing.

CONSULTATION AND COORDINATION

TABLE 7-2 (continued)
COMMENT LETTERS

Comment Number	Commenter	Representing
23	Lillian Tenopyr	Self
24	Darrell E. Smith	Salt River Project
25	Roger E. Nelson	Utah International Inc.
26	David Marcus	Environmental Defense Fund
27	Jonathan M. Teague Mimi Lopez William Paul Robinson	Rio Grand Chapter, Sierra Club, Committee on Coal, Southwest Research Information Center
28	Edward L. Hughes	Western Energy Company
29	Karl Gawell	National Wildlife Federation
30	Brooks B. Yeager	Sierra Club
31	Johanna H. Wald, Laura B. King	National Resources Defense Council
32	George A. Sinner	State of North Dakota, Executive Office
33	Governor Toney Anaya Paul Biderman	New Mexico, Office of the Governor
34	Kathryn Albrecht	Taos Environmental Association
35	J.D. Spaulding	Getty Mining Company
36	Duane K. Flick	American Lung Assoc. of North Dakota
37	William R. Taylor	Trapper Mining Inc.
38		Office of Surface Mining, Reclamation and Enforcement
39	John D. Schelberg	New Mexico Archaeological Council
40	Jim Baca	New Mexico, Office of the Commissioner of Public Lands

COMMENTS AND RESPONSES

TABLE 7-2 (concluded)
COMMENT LETTERS

Comment Number	Commentor	Representing
41	George R. Farris	USDI, Bureau of Indian Affairs
42	J. Richard Ambler	Northern Arizona University
43	Jennifer L. March	Environmental Policy Institute
44	Gregory E. Conrad Bruce H. Watzman	American Mining Congress National Coal Association
45	Ray Fritz	USDI, Fish and Wildlife Service
46	Allan Hirsch	U.S. Environmental Protection Agency
47	Governor Ted Schwinden	Montana, Office of the Governor
48	Governor Ed Herschler	Wyoming, Office of the Governor
49	Governor Norman H. Bangerter	Utah, Office of the Governor
50	David H. Getches	Colorado Dept. of Natural Resources
51	Patty Kluver	Self
52	Mary Lou Grier	USDI, National Park Service
53	George G. Byers	SF Coal Corporation

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February 11, 1985

Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
555 Zany Street - 1st Floor
Denver, CO 80228

"Letter of Clearance" In Conformance with the North Dakota Federal Program Review System - State Application Identifier No.: ND8502080056

Dear Mr. Edwards:

SUBJECT: Federal Coal Management Program - Draft EIS Supplement, February 1985

The above referenced supplement has been reviewed through the North Dakota Federal Program Review System and based on the results of the review, clearance is given to the project as described.

If the proposed project changes in duration, scope, description, budget, location or area of impact, from the project description submitted for review, then it is necessary to submit a copy of the completed application to this office for further review.

We also request the opportunity for complete review of applications for renewal or continuation grants or applications not submitted to or acted on by the funding agency within one year after the date of this letter.

Please use the above SAI number for reference to the above project with this office. Your continued cooperation in the review process is much appreciated.

Sincerely,

Bill Robinson
Program Administrator
Office of Intergovernmental
Assistance

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CONSULTATION AND COORDINATION

2



State of Montana
Office of The Lieutenant Governor
Helena 59620

GEORGE TURMAN
LIEUTENANT GOVERNOR

February 14, 1985

Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
555 Zang Street, First Floor East
Denver, CO 80228

Re: Draft Environmental Impact Statement Supplement - Federal Coal Management Program
Montana State ICR (Clearinghouse File No. M-850214-461-X)

Dear Mr. Edwards:

A copy of the above captioned document has been received in our office. In order to provide notification to parties that may be interested in review and/or comment on the DEIS Supplement, it will be listed in the next Intergovernmental Review Bulletin issued from this office.

Any inquiries or comments regarding the DEIS will be directed to your office. We have asked that comments be submitted by April 9, 1985, as directed, and that copies be sent to the Clearinghouse for our files.

The Clearinghouse intends to take no further action on this proposal. An official state process recommendation on the proposal will not be issued by the Clearinghouse and the federal agency is at liberty to process accordingly.

Cordially yours,

H. Angus Zippert
H. Angus Zippert
Clearinghouse Manager



State of Montana
Office of The Lieutenant Governor
Helena 59620

GEORGE TURMAN
LIEUTENANT GOVERNOR

February 14, 1985

Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
555 Zang Street, First Floor East
Denver, CO 80228

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Cordially yours,

H. Angus Zippert
H. Angus Zippert
Clearinghouse Manager

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MESA VERDE REGIONAL RESEARCH CENTER
UNIVERSITY OF COLORADO

P.O. BOX 992

DOVE CREEK COLORADO 8124

20 February 1985

Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
565 Zang Street
First Floor East
Denver, CO 80228

Dear Mr. Edwards:

I am responding to Federal Coal Management Program: Draft Environmental Statement Supplement, February 1985.

After considerable time spent examining this report I have formulated several questions. However, I will limit my reply to a couple of questions and my final opinion.

I am particularly concerned with America's Cultural Resources. On page 68 (Figure 2-1; and, elsewhere) the impression is given that cultural resource inventories will be undertaken prior to actual leasing or mining.

1. Who will pay for these inventories and at what point in the system will they be undertaken?

2. Is it proposed to utilize Predictive Modeling during this exercise? Regardless, Cultural Resources are not adequately addressed in this report, and Predictive Modeling, unless utilized correctly, can be not only inadequate but stupid.

Review of cultural resources, air quality and ground water (the areas of my most immediate concern), as well as the energy need of the United States, indicates that these concerns will best be met under the No New Federal Leases alternative.

Sincerely,

David A. Bretternitz

David A. Bretternitz
Director

RESPONSE TO COMMENT LETTER 3

Prelease inventories are paid for by the Federal Government, whereas postlease inventories are usually paid for by the lessee. Also see response to comment 13-7. Decisions on whether to use Predictive Modeling will be made on a case-by-case basis.

3-1



Department of Energy
Washington, D.C. 20585

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JUN 10 1985

Jack D. Edwards, Project Manager
Division of EIS Services
Bureau of Land Management
555 Zang Street, First Floor East
Denver, Colorado 80228

Dear Mr. Edwards:

We have reviewed the Draft Environmental Impact Statement Supplement and other documents prepared by the U.S. Department of the Interior, Bureau of Land Management, for the Federal Coal Management Program.

Enclosed are comments we offer for your consideration in the preparation of the Final Environmental Impact Statement Supplement. Please call Betty Jankus of the Office of Environmental Compliance (202-252-6374) if there are any questions relative to the comments.

We appreciate the opportunity to comment on this important matter and trust you will find our comments helpful.

William A. Vaughan
William A. Vaughan
Assistant Secretary
Environment, Safety, and Health

Enclosure

CONSULTATION AND COORDINATION

DOE COMMENTS ON DOI/BLM'S DRAFT EIS SUPPLEMENT FOR THE FEDERAL COAL MANAGEMENT PROGRAM

Summary Section

General

1.

Nowhere in the summary is it stated why the Department of Interior (DOI) believes the proposed action is the best alternative. Based on bits of information found elsewhere in the document the reasoning seems to be:

- o U.S. production levels through the year 2000 would, in all likelihood, be unaffected by the leasing program chosen.
- o If the No New Federal Leases alternative is chosen, sites for the additional coal production capacity required by increased demand will be selected from a small proportion of the total U.S. resource base (for example only 20-30 percent of the western coal reserves are privately controlled and would be available for development).
- o If the Proposed Action is taken, all potential sites would become available for consideration.
- o Since some of these additional sites would be less expensive to develop and would present fewer environmental concerns than private sites which would be developed under the No New Federal Leases option, the Proposed Action is both economically and environmentally superior to the other options.

Whether, in fact, this is the rationale behind the Proposed Action, some reason for the DOI endorsement of this option should be included.

General

2.

We suggest the addition of a section which notes that the difference in impacts between the Proposed Action alternative and the No New Leasing alternative may be largely in the location and not the nationwide magnitude of the impacts. Indeed, the differences between health and safety hazards nationwide may be minimal or even adverse under No New Leasing.

P.4

The summary compares the estimated impacts of the Proposed Action of the 1985 Draft Environmental Impact Statement Supplement (1985 DEISS) to the estimated impacts of the Preferred Program described in the 1979 Final Environmental Statement (1979 FES). This comparison is made despite the fact, noted on page 4, that the 1985 and 1979 analyses are not directly comparable. For example, the 1985 analysis does not include downstream coal use impacts. Further, since the 1985 and 1979 programs

COMMENTS AND RESPONSES

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do not differ enough in their essential components to constitute reasonably contrasting alternatives. (as noted on p. 64), most of the noted differences resulted from changes in forecasted production that resulted from exogenous economic changes (i.e., the unexpected jumps in world oil prices and the resultant recession and fall in coal demand).

We would recommend that the summary first qualitatively compare the 1979 and 1985 programs so that changes in impacts can be seen in context. It would then be helpful to show the difference between the economic assumptions and the coal production projections for the 1979 Preferred program and the 1985 Proposed Action. After presenting this background material the production forecasts and environmental impacts under the 1985 Proposed Action can be compared to the No New Federal Leasing Alternative.

One impact factor mentioned by the DEISS is the transportation capacity needed to haul coal from the mines. The document should indicate in the Summary how far into the coal cycle this factor is considered.

Socioeconomics: The decline in coal projections doesn't fully explain the over 80 percent drop in estimated coal related employment. Some discussion of other factors involved in such a dramatic decrease may be warranted. Perhaps increased productivity is one such factor.

Health and Safety: An 80 percent drop in the number of miners leads to only a 25 percent drop in accidents. We do note that the employment numbers are for five regions and the accident numbers are for six--but some explanation for such a large discrepancy should be included.

Chapter 1--Introduction

Table 1-7, last entry. A definition of what constitutes coal production in commercial quantities would be helpful since this term appears many times in the DEISS. A definition of "Production Forecasts" as determined by mine plans and how this differs from demand forecasts is also needed.

Chapter 2--Description of the Proposed Action and Alternatives

First paragraph, line 4. A definition of short-term shifts in coal production sites would be helpful.

3

The statement that "Without the ability to consider the need for new Federal leasing, the Federal Government cannot provide the opportunity to satisfy the market demand," is not true. This could be done by offering all Federal lands for lease or by using the "lease by application" system. The problem is to do this and receive "fair market value" for the lease.

It was stated that a policy of no new Federal coal leasing would not lower coal production, although it might increase costs. We suggest, however, if "no leasing" increases costs, it must lead to lower production since the demand for coal is not perfectly inelastic. Also, as noted on p. 111, the shift to higher-Btu Midwestern and Appalachian coals would cause a fall in production since a given Btu coal demand could be satisfied by fewer tons of coal.

Second and last paragraphs. If coal production in the Western states is constrained by a lack of markets (second paragraph), DOI's concern (last paragraph) that a decision not to lease Federal coal would inhibit Western coal industry competition appears incongruous. If there is already a lack of markets, additional availability of coal would not necessarily result in a healthy market, although it could increase coal industry competition even more in the West. The DEISS should further explain this market situation.

it should be noted that a decision not to lease Federal coal could impair the economically efficient development of coal reserves by blocking development of specific Federal reserves that may have the most desirable characteristics, the lowest cost of production, or the best location.

The role of competition is discussed briefly but the analysis is misleading. It discusses concentration, but it does not consider relevant markets or concentration measures. In particular, concentration by mines (as opposed to firms) and concentration of acreage (as opposed to reserves) are virtually meaningless as indications of the level of competition. The analysis correctly stresses the importance of leasing to allow competitive bids on utility contracts and to facilitate entry by new firms.

Third paragraph. The DEISS should explain the significance of requiring a Resource Management Plan instead of a Management Framework Plan prior to beginning new Activity Planning.

CONSULTATION AND COORDINATION

<p>p. 78</p> <p>4-14</p> <p>The authority to issue diligence regulations was transferred to DOE by the Department of Energy Organization Act of 1977, not the "Organic Act of 1978."</p>	<p>Chapter 3--Production Forecasts</p> <p>p. 89</p> <p>4-15</p> <p>It is stated that developing the forecasts involved combining the energy data from the Energy Information Administration (EIA), the Department of Energy's (DOE) Policy and Fossil Policy Offices, and BLM. Much more than combining data was involved, since the basic assumptions were different. For example, the world oil price assumptions presented in Table 3-3 (p. 93) are quite different from the assumptions used in the EIA forecasts.</p>	<p>p. 90</p> <p>4-16</p> <p>The source for the 1985 production forecast in Table 3-1 should be more specific. There should also be a separate column for the 1985 forecast, which does not fall under the "low production level" category.</p>	<p>pp. 91-92</p> <p>4-17</p> <p>It would be useful to have a more detailed explanation of the forecasting methodology, especially for the forecasts for the year 2000. Because of the 8-10 year time lag for developing mines, the impacts of leasing on production (and therefore the environment) would not be observed in the West until about 1995 or later. Throughout the DEISS, it would make sense to place more emphasis on the forecasts for the later years (1995 and 2000) and less emphasis on the earlier years.</p>	<p>p. 93</p> <p>4-18</p> <p>Paragraph before Table 3-3: Do the EIA (1985-1995) numbers show the same pattern that the Policy numbers (1985-2000) do?</p>	<p>p. 94</p> <p>4-19</p> <p>No quantitative estimates of a possible national acid rain program should be considered in any of the scenarios since there is neither a proposal by a regulatory agency based on existing legislation nor a single, generally accepted legislative model.</p> <p>4-20</p> <p>Additionally, including an interpretation of a possible acid rain program in one production level and not in others is inappropriate.</p> <p>Also, we note that other proposed regulations or legislation are not included; e.g. stack height credits or future revisions of NSPS.</p>
<p>4-20 cont</p> <p>p. 94</p> <p>4-21</p> <p>Therefore, we suggest, in general, that no potential legislation or regulation be included unless there is no discretion available on how it would be implemented. Under this definition none of the NSPS or acid rain proposals would be included.</p>	<p>Second bullet. This assumption is not supportable vis-a-vis the potential increases in coal freight rates discussed in the recent Interstate Commerce Commission (ICC) EIS on the subject (see Comment on p. 102 below).</p> <p>p. 96</p> <p>4-22</p> <p>The EIA National Coal Model (NCM) used for input into the DOI production forecast, does not incorporate the proposed ICC rate guidelines. Instead, it uses an escalation mechanism based on the Staggers Act of 1980. It is doubtful that this approach completely reflects the future uncertainty of coal transportation costs. (See comment on p. 102 below)</p>	<p>pp. 102</p> <p>4-23</p> <p>The DEISS does not take into account the potential changes in coal rail freight rates as contemplated in the Interstate Commerce Commission (ICC) proposed maximum rate guidelines where potential rate increases range from 10 percent to over 600 percent in real terms (i.e., exclusive of inflation). The actual amount of increase will depend on competition and the financial condition of each railroad since the proposed guidelines are structured to allow up to 15 percent per year real increases until the railroad achieves "revenue adequacy" (the upward rate increase constraints).</p>	<p>The ICC has published an EIS, Ex. Parte 347 (Sub. No. 1), Coal Rate Guidelines, 1983 (DEIS) and 1985 (FEIS), in which the environmental and economic impacts of several freight rate increase scenarios were assessed. In that document, the impacts arise primarily out of (a) shifts in demand from western to eastern coal and (b) an overall decrease in the demand for coal. This phenomenon could, in turn, affect the Federal Coal Management Program, largely by lessening the estimated environmental impacts, especially in the West. Some discussion in the DOI Final Supplement should reflect the proposed ICC action.</p>	<p>p. 105</p> <p>4-24</p> <p>First paragraph. The reason why nuclear capacity is expected to stagnate between 1995 and 2000 should be given.</p>	

COMMENTS AND RESPONSES

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p. 107	4-25	First paragraph. Describe the basis for the "expectation" that energy demand is increasing much faster in the West and Southwest than in other U.S. regions.
p. 115	4-26	Table 3-9 is inconsistent with the text (pp. 106 and 107) and with previous tables (such as Table 3-1) that show Western production is higher under the Proposed Action than under the No New Federal Leasing alternative.
p. 116	4-27	Second paragraph. Explain why synthetic fuel demand mostly affects Western coal regions.
p. 116	4-28	More careful citation of DOE sources would enable the reader to find the original source more easily. On pp. 117 and 118, the correct citation is Annual Outlook for U.S. Coal 1984, DOE/EIA-0333(84). This source was not included in the list of references cited. Also, at the bottom of p. 117, the text refers to EIA's Fort Union Region forecasts and forecasts for part of Wyoming. The Annual Outlook for U.S. Coal does not present forecasts for these regions.
p. 117	4-29	The market analysis section of the DEISS cites only one non-government demand forecast, that of DRI. Since demand forecasts are central to government management decisions, this section is very likely to draw comment. It may be useful to add the forecasts of others such as the National Coal Association (NCA) or Chase Econometric Associates, Inc. (CHASE). For instance, the 1995 projection of BLM is 1180 m.t. while the average of EIA, NCA, DRI, and Chase is 1230 m.t. Comparison to an average is a much more solid, and less-easily criticized, exposition.
pp. 117-118	4-30	A comparison table showing fewer years but including the EIS, DRI and EIA Coal Production Forecasts side by side would be more helpful than the two tables shown.
Chapter 4 Description of the Environment and Environmental Consequences		
General		The DEISS would benefit from a more consistent approach to the discussion of mitigation of development impacts both at the programmatic level and the regional level.
	4-31	Mitigation of the environmental concerns expressed by Native Americans (p. 173-180) is largely not addressed. Discussion of mitigation in the Wildlife

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4-31	cont.	section (p. 213-219), is limited to impacts on wildlife that are game species.
pp. 125-133	4-32	This description of the affected regions is short and very broad but, when coupled with the descriptions contained in the 1979 FES, does provide adequate socioeconomic background information.
p. 159	4-33	Transportation impact assumptions. After the first paragraph in this section, it is unclear which of the bulletized items are actually assumptions of the analysis. Again, there is no mention of the proposed ICC actions regarding freight rates. (See comment on p. 102)
p. 165	4-34	The 1978 estimate that 10 percent of U.S. coal production moves from the mine by truck could be updated. For example, a recent EIA publication stated that trucks handle about 14 percent of domestic coal shipments (Coal Data: A Reference, DOE/EIA-0064(84), p. 12).
p. 169		Health and Safety. The DEISS prefaces this section by stating that the analysis will apply to all alternatives and regions (i.e., it does not attempt to address health and safety impacts by individual coal development alternative or region of the U.S.). This approach is faulty because health and safety impacts may vary according to whether development occurs more by building new mines than expanding existing ones, a factor that may be region- or alternative-dependent. The DEISS also overlooks other risks that may vary by region, e.g., the presence of steep or especially subsidence-prone terrain in some areas of coal extraction.
4-35		The FEISS should clearly discuss the nationwide impacts of the alternatives. Also, the reason why the Health and Safety section does not attempt to analyze the health impacts of the Proposed Action in terms of the low, medium, and high coal production scenarios should be given (safety impacts by scenario are shown on page 172).
p. 188	4-36	Fifth paragraph. Reference is made to the possibility of more stringent air quality standards at the State level. The DEISS should indicate whether State

CONSULTATION AND COORDINATION

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p. 189	436 cont	standards are, in fact, more stringent in 1985 than Federal standards for those States included in the six Federal coal regions addressed in the DEISS.
p. 190	437	Second paragraph. The DEISS should not exclude coal processing facilities from its consideration of PSD Regulations, since coal beneficiation is within the stated scope of the DEISS.
p. 190	438	First paragraph. The discussion of fugitive dust settling rates and health hazards should also address the potential for dust re-suspension.
p. 202	439	Threatened and Endangered Plants. The DEISS does not indicate the presence or absence of federally-listed species for the Alabama subregion.
p. 208	440	Third paragraph. The general duration of the "short period" that soils would be disturbed during coal development should be stated. (The same comment applies to the second and third paragraphs under impacts, on page 211.)
pp. 211-212	441	Increased coal production effects on the agricultural sector, with respect to both increased volumes of rail traffic and availability to the agricultural sector of adequate levels of rolling stock to move grain harvests, should be addressed.
pp. 262-264	442	Table 4-17, Coal-Related Water Use. The water used during coal beneficiation, a potentially significant use of coal region water, is apparently not addressed in the table. This should be corrected, since coal beneficiation is one of the stated impact areas to be covered in the DEISS.
p. 265	443	Line 1: third and seventh paragraphs. The DEISS should state whether the coal-related water use mentioned here includes water for coal processing.
Chapter 5--Comparative Analysis		
p. 273	444	The comparisons of impacts among regions would be more meaningful if given as percent changes as well as absolute numbers. In addition, the DEISS comparative analysis could explore the management strategy of developing coal more extensively in one region than another, if certain impacts appear unacceptably high in a given coal region.
p. 273	445	The document states that the comparative analysis of impacts will only look at the year 2000 high-production scenario because the other production

9

445 cont.	comparison of alternatives and scenarios, both within and among regions, may be of interest. For example, the Fort Union region socioeconomic impacts (change in population size) in the 1995 projection for medium-level and high-level coal production in the Preference Right/Emergency Leasing option show changes of 17 percent in each case relative to the No Action option. The values for these same scenarios under the Proposed Action option are 18 percent and 32 percent, respectively. Air quality and water use impact changes may also be of a magnitude worth addressing. To rule out discussion of this Fort Union data because changes in other coal regions and scenarios may not be as large against the No Action option (except at year 2000, high-production levels) is to risk overlooking patterns of potentially significant change in environmental impacts that could affect certain geographic areas within and between regions in the DEISS.	
pp. 274-278	446	Table 5-1. This table identifies air quality impacts (as TSP) by State of origin for many of the coal regions. This approach is not used for water use impacts, socioeconomic impacts, or any other impact category in the table. An explanation would be helpful.
p. 279	447	Air Resources. The statement that the Proposed Action alternative will yield 10,000 tons/year less TSP in 2000 (at high production) in the Powder River region, relative to No Action, is not correct. Table 5-1, page 275, shows that this is the value for Montana only. The Wyoming part of the region will experience a 69,600 tons/year TSP increase over the No Action alternative, at the same production level. The range for all regions at the year 2000 high production level (relative to No Action) is from -12,000 tons/year TSP at Green River-Hams Fork, to +60,000 tons/year TSP at Powder River (taking the net value when two States comprise one region). This differs from the range given in the DEISS (page 279) which was from -10,000 tons/year TSP to +21,000 tons more than the No Action case.
p. 279	448	Health and Safety. For the Proposed Action in year 2000, at the high production level, the health and safety data in Table 5-1 do not agree with the text description of impacts. Table 5-1 shows a decrease of 59 accidents per year at Green River-Hams Fork, relative to No Action. Page 279 says that accidents will increase by that number. Table 5-1 also shows an increase of 134 annual accidents for the Uinta-Southwestern Region, while page 279 says that the

10

4-48 | increase comes to 296 accidents. The DEISS should
cont correct these discrepancies.

Appendix 6 Proposed Coal Program Changes

General

4-49 | The information in Appendix 6 of the DEISS is of
considerable interest and vital to an understanding
of the Federal Coal Management Program. Yet
virtually all of this appendix is reproduced in such
fine print that it is difficult to adequately review
the material. Appendix 6 should be changed so that
its contents are more legible. One option would be
to issue this material under separate cover.

p. 359 | This part of Appendix 6 contains an Environmental
Assessment (EA) whose contents seem central to the
issues presented in the DEISS itself. The reason why
the EA (responding to OTA recommendations on lease
rates, environmental analysis, and other issues) and
the DEISS (addressing the need for, and nature of,
the proposed leasing program) are presented as two
separate documents by DOI should be discussed in the
DEISS.

4-50

p. 375 | Figure 1, Land Use Planning for Coal. Most of this
4-51 | flowchart is illegible and should be enlarged for
clarity.

p. 407 | The degree of interdependence between coal production
levels and transportation costs of western coal
(where transport cost often exceeds 50 percent of the
delivered price) should not be left unstated or
unintentionally misstated. A statement is made on
(page 9) that "Impacts of Federal coal leasing
policies on transportation costs and networks outside
the west...are highly speculative and therefore not
part of this analysis." This distorts the realities
of the interdependence which exists between coal
leasing, coal production, coal transportation, and
coal consumption.

4-52

Specifically, transportation networks will not only
be affected by, but will also have a profound impact
on coal leasing policy. The demand for western coal,
Federal or otherwise, will be determined by a broad
range of factors, including macroeconomic conditions,
legislation to enhance environmental quality, and
last, but certainly not least, the rate deregulation
environment in which coal-handling railroads will be
operating during the next 20 to 30 years. The ICC
EIS mentioned above (Comment on p. 120) indicates

11

years. The ICC EIS mentioned above (Comment on
p. 120) indicates that coal supply regions located
significant distances (e.g., in excess of 800 to 1000
miles) from market centers would, under the rate
scenarios evaluated, be expected to experience
significant (15 to 17 percent) declines in the
forecast quantity of coal produced by 1995.

4-52
cont.

Production Forecast Technical Report (March, 1985)

o | Section V "Production Forecasts" states that "Under
is the proposed leasing program the Powder River region
4-53 | is the swing supplier, capturing a large proportion
of the new demand." Yet Table V-1 indicates Powder
River produces less under the Proposed Action (270)
than under No New Federal Leasing (275).

o | Table 1-1 states that Western coal production for
high demand in 2000 would be 520 with no new leasing,
4-54 | Table IV-1 states that production capacity with no
new leasing would be 545-616, and Table V-2 shows it
to be 533.

Since a primary assumption of the EIS is that the
largest impacts occur in 2000 with high demand and
Western production at a limit with no new leasing,
presumably the 545-616 number would be most
pertinent.

o | The DRI forecasts in Table VI-1 add up correctly for
4-55 | the years 1985, 1990 and 1995 but not for 2000 or
2005.

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 4

- 4-1 This suggestion has been incorporated into the Summary.
- 4-2 The discussion in Chapter 5 notes that the coal production forecasts for the aggregated regions under the Proposed Action and No New Federal Leasing are shown in Table 3-1 and discussed briefly in Chapter 3. The forecasts in Table 3-1 of this final supplemental EIS have been revised and significantly differ from those in the draft. The greatest difference is that Table 3-1 in the final shows a 3 million ton/year decrease (less than 1 percent) between the Proposed Action and No New Federal Leasing for the aggregated Western regions at the 1995 high production level. Impacts associated with these minor shifts among the three aggregated coal-producing regions are insignificant and not discussed further in Chapter 3.
- 4-3 The Summary states that the Proposed Action would continue the major elements presented in the 1979 FES (BLM 1979a) and would incorporate revisions to the program made in 1982 and 1983 and changes proposed in 1984 and 1985. These revisions and proposed changes are summarized for each major element in the description of the Proposed Action in Chapter 2. Specific changes or differences from the 1979 program are discussed. Repeating all of these detailed program differences in the Summary would be redundant, and thus the Summary has been amended to refer the reader to Chapter 2 for the recommended comparison.
- Different sets of assumptions were developed for the low, medium, and high coal production levels in 1979 and 1985. Detailed assumptions are given in Chapter 3 of the 1985 supplemental EIS and in Chapter 2 of the 1979 FES. Both documents include projections for 1990. (The 1979 FES did not project beyond 1990.) BLM is completing an abbreviated comparison for two selected key assumptions--world oil prices and electrical demand for the medium production level in 1990. The 1979 FES assumed world oil prices at \$15 per barrel compared to the \$29 per barrel assumed in the 1985 supplemental EIS. The assumed annual growth rate in electric power was 4 percent in the 1979 FES and 3 percent in the 1985 supplemental EIS.
- Figures 3-3a through 3-3f compare 1979 FES and the 1985 supplemental EIS coal production estimates by region for 1990.
- 4-4 The text of the Summary has been amended to address the scope of transportation.
- 4-5 Part of the reason for the difference in coal-related employment between 1979 and 1985 is the projection of reduced coal production, but the main reason is the difference in methodology. The 1979 projections overestimated employment impacts for several reasons: (1) using total coal production rather than production increases over present levels, (2) basing construction on existing coal production instead of future increases, (3) assuming all new employment to require immigration, and (4) basing secondary

- (indirect) employment on total primary employment rather than on immigration. Details on methods and multipliers are included in Appendix 4.
- 4-6 The text has been corrected. The comparisons in these summaries are between the 1979 FES and this supplemental EIS and reflect updated estimates for each resource.
- 4-7 The term "commercial quantities" as used in the July 1979 and July 1982 regulations is defined at the bottom of Table 1-5 of this final supplemental EIS. The term "production forecast" has been added to the Glossary.
- 4-8 This sentence should have been removed. Under preliminary analysis, the higher demand production levels with more leasing resulted in production above the 1990 capacity but below the 1995 capacity. Thus, under No New Federal Leasing, production would shift in the 1990 forecast for Utah but not in the 1995 forecast. Correction in transportation costs eliminated this phenomenon, but the sentence on page 59 of the draft supplemental EIS was not removed. The text of the final supplemental EIS has been changed to eliminate the error.
- 4-9 After review, the statement that "Without the ability to consider the need for new federal leasing, the Federal Government cannot provide the opportunity to satisfy the market demand for the acquisition and development of new federal coal leases" appears to accurately describe one general purpose of the federal coal management program. As the commenter points out, a number of alternatives fulfill that purpose, including the Proposed Action, offering all federal coal and using the lease by application system. Alternatives that BLM considered reasonable and feasible are fully discussed in Chapter 2. Proposed Action and Alternatives. Alternatives that were not fully analyzed are described in Alternatives Identified but not Considered further in Chapter 2.
- 4-10 As is the point of the last line in the first paragraph, the statement in the second paragraph will be corrected to say "it would not significantly lower coal production."
- 4-11 The concern that No New Federal Leasing would inhibit competition (last paragraph on page 60 of the draft supplemental EIS) is a long-term concern. The immediate situation has been generally described in paragraph 2 of page 60. Current competition for new contracts in most regions is keen.
- The point of economically efficient development is discussed in the Patterns of Development section in Chapter 2.
- 4-12 The analysis presented on competition is brief and far from definitive, but is not misleading. The examples given accurately portray an industry that is fairly concentrated (based on the data analyzed: mine production and holdings of federal acreage and reserves). Federal coal leasing gives new companies an opportunity

COMMENTS AND RESPONSES

the acid rain assumption did not appreciably affect the forecasts for the other federal regions, but for the year 2000 the production forecast for the Midwest evidently increased by over 10 million tons per year and that for Central Appalachia decreased by only several million tons per year. This is less than a 5 percent change in any regional forecast and is not significant in light of the inherent degree of uncertainty in such forecasts.

A basic assumption of the final supplemental EIS is that no potential legislation or regulation would be included unless discretion could be applied on how the law or regulation would be implemented.

This assumption has been removed from the final supplemental EIS.

The Interstate Commerce Commission rate guidelines are now only proposed. The transportation rates used in the National Coal Model (NCM) for these runs is derived from current costs and projections of future costs and competition levels. The guidelines will be more important where both producers and consumers are captive to the same shipper. Otherwise, competition will play a larger role, as in the Powder River Region. As the current formulation of the NCM does not allow for price discrimination, it cannot capture all the variability in rates. A more complete sensitivity analysis regarding transportation rates is beyond the scope of this supplemental EIS and is not needed for the analysis of environmental impacts.

See response to comment 4-22. The main Western region supplying coal outside its own area in the forecasts is the Powder River Region. The new competition for transportation in this region is expected to hold down major rate increases in this and other Western regions. According to the forecasts in the draft supplemental EIS and the Production Forecast Technical Report (BLM 1985b), the Western regions would experience more competition. If the rates increase faster, thus reducing western production, impacts would be lower but probably not below those expected at the low production levels.

As stated on page 92 of the draft supplemental EIS, the assumption is that no nuclear plants other than those almost complete will come on line by the year 2000. This assumption would mean that no additions would occur in the period 1995-2000.

Generally accepted projections of future economic and population growth indicate that the sunbelt states will be the fastest in population and economic growth, leading to faster energy growth in these same regions. BLM does not now need further sensitivity analysis on this topic other than what is in the draft supplemental EIS and the Production Forecast Technical Report (BLM 1985b). This discussion has been deleted from the final supplemental EIS.

Table 3-9 is incorrect and has been changed in this final supplemental EIS.

to enter the industry or region. The example given documents acquisitions of federal reserves in 1981 by companies with no previous federal holdings. Although this example is not conclusive evidence of new entries, in the Western regions virtually all operating coal mines are associated with federal reserves, and a close correlation exists between new entries and federal holdings.

Since 1979, the Department of the Interior's policy has been that management framework plans, amended to comply with the Federal Land Policy and Management Act (by applying the four coal screens), were valid land use plans for coal leasing. In addition, it has been the Department's policy that new land use plans prepared after the coal program was implemented would be resource management plans (RMPs), but the Department recognized that such plans would be phased in gradually rather than all at once because of budget and personnel constraints. The Secretary's proposal to require RMPs for all new rounds of activity planning reflects the status of BLM's planning schedule. RMPs for most public lands are now in preparation. The proposal's only significance is that it reaffirms a decision made in 1979 to prepare new land use plans consistent with the regulations in 43 CFR 1600. Also see response to category 11, Linowes Commission Report, in the Categorical Analysis of Comments section of this chapter.

The text has been corrected.

Because the Department of Energy, Energy Information Administration (DOE/EIA) Annual Energy Outlook (AEO) 1983 oil prices were not current and BLM did not have access to the AEO 1984 price, alternative price scenarios were used. Other assumptions also deviated from DOE's, as noted in the draft supplemental EIS and the Production Forecast Technical Report (BLM 1985b).

These changes have been made in Table 3-1 in this final supplemental EIS.

More detail on the production forecasting methodology is included in the Production Forecast Technical Report (BLM 1985b), and the discussion of the methodology has been expanded in this final supplemental EIS (see Appendix 8).

The forecasts for 1995 and 2000 are emphasized because in these years the alternative programs would differ the most.

A direct comparison cannot be made because EIA assumptions and forecasts deal with the next 10 years, whereas those of policy deal with the time period beyond that.

Acid rain legislation has been removed from consideration as an input to the National Coal Model for determining production forecasts. Although directly comparable model runs were not made, the change in the assumption probably resulted in a reduction of from 10 million to 20 million tons per year for the year 2000 in the production forecast for the Powder River Region. The change in

CONSULTATION AND COORDINATION

- 4-27 This section is discussing the differences in assumptions between the 1979 FES (BLM 1979a) forecasts and the current forecasts. Because the 1979 FES synthetic fuel coal consumption occurred mostly in the Western regions, the elimination of this demand in the current forecasts would mainly affect the Western regions.
- 4-28 The correct citation should be Annual Energy Outlook (AEO) 1983. The AEO 1984 was not ready in time for use in the draft supplemental EIS and does not provide detailed regional forecasts.
- 4-29 More forecasts are compared in the final supplemental EIS. The range of alternative forecasts is just as important as the average.
- 4-30 A new table, Table 3-13, has been added to the final supplemental EIS.
- 4-31 Two sections in Chapter 1 present a detailed discussion of the federal and state statutory basis for mitigating coal development impacts from a programmatic standpoint: (1) Federal and State Constraints on and Authorities for a Coal Management Program and (2) Major Federal and State Laws Mitigating Coal-Related Impacts. The mitigation of coal development impacts at the regional level will be addressed in regional coal EISs if the Proposed Action is adopted.
- The Native American Issues section of Chapter 4 addresses environmental issues and concerns by region and tribe, lists several areas related to coal development that will need mitigation, and suggests several potential mitigation measures that could be applied to Indian or federal coal development. Mitigation is applied to environmental impacts related to coal development rather than to environmental concerns.
- The first paragraph of the Native American Issues sections states that the environmental effects will be examined in detail in the regional or site-specific coal EISs. Specific mitigation measures will also be addressed in these documents if the Proposed Action is adopted.
- An explanation of why small nongame species do not require more mitigation measures has been added to the Wildlife, General Impacts section of Chapter 4.
- 4-32 All of the bulletized items are a part of the assumption statement. The Interstate Commerce Commission freight rates were considered in forecasting coal production.
- 4-33 The estimate has been updated and text revised in response to your comment.
- 4-34 At the programmatic level it is not possible to be site specific. The calculations are based on production levels and are separated only by surface versus subsurface mining.

- 4-35 BLM knows of no method to predict health impacts from coal production. Because the commenter did not suggest one, the text has not been changed.
- 4-36 The statement means that state standards must not be less stringent than National Ambient Air Quality Standards (NAAQS). This supplemental EIS does not compare regional emission totals to state standards. A more detailed site-specific analysis will come later in the process.
- 4-37 The paragraph referred to gives the reason coal mines are not likely to be subject to Prevention of Significant Deterioration (PSD) regulations. As stated on page 190, paragraph 3 of the draft supplemental EIS, processing facilities were included and were used in calculating total suspended particulates. See Appendix 4, Air Quality Methodology, for more detail.
- 4-38 Because the commenter did not go into any more detail, BLM assumes resuspension refers to a process where wind picks up particles previously settled out. Resuspension would depend upon local climatic factors and could be analyzed only on a site-specific basis, which is beyond the scope of a programmatic EIS.
- 4-39 The paragraph on federally listed plants and animals appears on page 216, paragraph 2 of the draft supplemental EIS.
- 4-40 The supplemental EIS has been revised to reflect your comment.
- 4-41 See page 59 of the draft supplemental EIS. Assumptions. The railroad industry's plans call for expanding line capacity and rolling stock to meet demand.
- 4-42 Water used during coal beneficiation is included in Table 4-17 as part of the coal-related water use for mining.
- 4-43 A note has been added to Table 4-17 to state where coal-related water use for coal processing has been included.
- 4-44 Table 5-2 has been added to Chapter 5 to add percent changes among the coal regions. Many strategies exist for developing coal more extensively in one region and less extensively in another if certain impacts appear unacceptably high in a given coal region. Although such strategies are beyond the scope of the program-level analysis, the information exists in the document for management to explore alternative strategies using the impacts associated with combinations of coal production (low, medium, high) in different regions.
- 4-45 Chapter 5, page 273 of the draft supplemental EIS states that, although Table 5-1 compares measurable impacts, the narrative discussion focuses on the high production level in 2000, where the greatest differences would occur. A similar discussion was not presented for other production levels and time periods because it would tend to be confusing or redundant due to small or no differences among alternatives in most regions. All differences within and among regions could be discussed by alternative, time period, and production level, but the narrative

COMMENTS AND RESPONSES

discussion for the high production level in 2000 portrays the worst-case situation. Table 5-2, however, has been added to Chapter 5 to include percentage differences and enable management and other interested parties to make the suggested comparisons.

Air quality impacts are shown by state because airsheds and air standards are set by state boundaries whereas other resources are not regulated by states.

The text has been corrected and revised.

The text has been revised to show the correct differences.

BLM has adopted this suggestion. Appendix 6 materials are not photoreduced in this final supplemental EIS.

The Department of the Interior decided to prepare this supplemental EIS mainly to determine if market conditions had changed significantly since 1979, when the existing program was adopted. The supplemental EIS analyzes alternative program frameworks. The environmental assessments for the proposals made in response to the Linowes (Linowes and others 1984) and OTA (1984) reports were specifically for the proposed revisions, not the program as a whole. These assessments resulted in findings of no significant impact to the environment.

BLM appreciates this suggestion. The only reduced appendix materials in this final supplemental EIS are the Unsuitability Review comments and responses in Appendix 1.

See response to comments 4-22 and 4-23.

At the medium production level, few shifts in production would occur, but restrictions in other regions under No New Federal Leasing would result in higher production in the Powder River Region than under the Proposed Action. With the more dramatic production increase at the high production level, the Powder River Region would become more of the swing supplier under the Proposed Action because this region would also reach its capacity under No New Federal Leasing.

Table I-1 in the Production Forecast Technical Report (BLM 1985b) shows regional production forecasts where 520 million tons is the total western production at the high production level under No New Federal Leasing in the year 2000. Table IV-1 shows potential production capacity in the federal coal leasing regions and does not reflect the market as modeled for each production level. Table V-2 shows production forecasts for only the federal coal leasing regions, including the Alabama Subregion, which is not in the West, and excluding western production in other regions (Raton Basin, Arizona, Alaska, and Washington). Thus the tables are correct.

This comment is correct. The correct numbers for western production should have been 464 million tons in 2000 and 553 million tons in 2005. DRI has since issued its summer 1985 forecast. The new numbers are shown in Table 3-11 of the final supplemental EIS.

CONSULTATION AND COORDINATION

5



4613 South 4000 West
P.O. Box 20222
Salt Lake City, Utah 84120
Phone 968-3548

February 20, 1985

Jack D. Edwards, Project Leader
Bureau of Land Management, Div. of EIS Services
555 Zang Street, First Floor East
Denver, Colorado 80228

Dear Mr. Edwards,

Thank you for the opportunity to review the Federal Coal Management Program Draft E.I.S. Supplement. After reading this document I was pleased to see that several animal-related issues have been included which are generally not considered in most of the E.I.S. proposals with which I have participated over the last twelve years.

The Draft's attention to non-game wildlife, including small mammals, reptiles, amphibians and ground-nestine birds was a welcome sight. Past E.I.S. proposals have almost totally neglected to consider the impacts of energy development on these numerous and important species.

The recognition of free-roaming domestic dogs as a population-related impact on wildlife was also noted as a more realistic view of energy-related activities.

The one major factor which I feel was omitted with respect to illegal and wanton killing (see page 218), was that of shooting incidents related to the carrying of firearms by project employees in their personal vehicles or in company transportation. Such easy access to weapons makes it all too simple to grab a rifle and shoot whatever animal may be encountered. We would encourage a policy of prohibiting firearms while working on public land energy development projects or while driving to and from work sites.

We found the Draft to be realistic in its assessment of wildlife impacts. There appears to be little difference in any of the alternatives related to the Uinta-Southwestern Region in the areas which would have the most impact to wildlife populations: Soils and Vegetation disturbed and habitat destruction.

DEDICATED TO THE ELIMINATION OF FEAR, PAIN AND SUFFERING OF ALL ANIMALS

Gifts and Bequests to the Society are deductible for income and estate tax purposes.

February 20, 1985
Jack D. Edwards, Project Leader
Page 2

Thank you again for this chance to give our input concerning this Draft E.I.S. Supplement. Your consideration of the firearms transportation issue would be greatly appreciated.

Sincerely,

John Paul Fox
Chief Investigator

RESPONSES TO COMMENT LETTER 5

- 5-1 BLM has no authority to regulate the carrying of firearms on federal, state, or private lands. Each company would determine the need for and enforceability of such a company requirement for employees as a condition of employment. Enforcement of hunting laws is the express authority of the state although in appropriate circumstances, cooperative law enforcement programs may be established.

CONSULTATION AND COORDINATION



Shell Mining Company

P.O. Box 2906
Houston, TX 77252

6

SUBSIDIARY COMPANIES
RAP COAL COMPANY
TUNNIS COAL COMPANY
TUNNIS COAL COMPANY

March 4, 1985

Mr. Jack D. Edwards, Project Leader
Bureau of Land Management, Division
of EIS Services
555 Zang Street, First Floor East
Denver, Colorado 80228

Dear Mr. Edwards:

Shell Mining Company wishes to comment on a statement made in the Draft Environmental Impact Statement, Federal Coal Management Program, in Chapter 4, page 177 under Native American Issues, Crow Reservation, it is stated that the Youngs Creek Mine is slated to begin operation in 1986. Please correct that statement to read: The Youngs Creek Mine is slated to begin operation as soon as a coal sales contract is obtained.

6-1

Very truly yours,

E. C. Summer

E. C. Summer
Manager, Mine Development
Shell Mining Company

CRT:PI

88AU856303

RESPONSE TO COMMENT LETTER 6

This statement has been corrected as suggested.

6-1



7
State Historical Society
of North Dakota (State Historical Board)
North Dakota Heritage Center Bismarck, N.D. 58505
Telephone 701/224-2666

IN RESPONSE PLEASE REFERENCE 84-419

March 12, 1985

Jack D. Edwards, Project Leader
Bureau of Land Management, Div. EIS Services
555 Zang Street, 1st Floor East
Denver, CO 80228

RE: Draft Federal Coal Management Program, Supplemental Environmental Impact
Statement, February 1985.

Dear Mr. Edwards:

We have reviewed the above referenced document. The document is, in our opinion, inadequate in terms of addressing the impacts of proposed federal actions on fragile and nonrenewable cultural resources. This inadequacy is primarily reflected by the lack of baseline data gathered for consideration, by a lack of reasonable extrapolation from existing data bases on areas adjacent to those considered, and by a lack of any clear statement about, or apparent recognition of, the Bureau of Land Management's responsibility to consider the effects of leasing per se (vs mining) on cultural resources. Our specific comments on the language of the document are as follows:

1. Pages 68 and 80: Neither the pre- or post lease flow charts, nor related explanatory sections, clearly identify when, where, or how the Bureau will comply with the National Historic Preservation Act of 1966, as amended, or the regulations at 36 CFR Part 800, i.e., consultation with the State Historic Preservation Officer (SHPO) and Advisory Council on Historic Preservation (ACHP). Page 234 indicates that this compliance will be achieved "before surface disturbance is authorized." This is insufficient to allow adequate assessment here of the environmental consequences, as the document suggests it is doing: neither is this adequate consideration of the effects of the Bureau's undertaking in terms of leasing federal minerals. The action of leasing minerals should be put through the Section 106 process: delaying this until the mining permit application/mining plan stage eliminates consideration of viable alternatives. The language of this document as written implies that compliance can always be achieved through some unidentified mechanism which will always subsequently allow "surface disturbance" to happen.

7-2 | 2. Page 237: The suggestion that selection of the "No New Federal Leasing Alternative" would cause more impacts than selecting, for instance, a leasing

COMMENTS AND RESPONSES

Mr. Edwards
Page 2
March 12, 1985

alternative which allowed more federal lands to be mined, does not make any sense at all. This section needs clarification. Does the Bureau mean that a lack of federal leasing will result in no planning? This section also seems in conflict with the combined statements later in the document that 25 million tons more will be mined under the Proposed Action than the No New Federal Leasing alternative by the year 2000 (page 282, last paragraph), and that the more acres disturbed the more cultural resources disturbed (page 281, 2nd paragraph).

7-2
cont.

3. Page 281, Comparative Analysis, Cultural Resources: (A) This is quantitative only. Some consideration should be made on a qualitative basis as well, i.e., the difference between shallow stone circle sites and deep, stratified flint quarry sites.

7-3

(B) Having said here that the number of sites by region is not known, how can the San Juan River region be said to sustain more impact than any other region? Is this a quantitative or qualitative statement? The Fort Union coal region has both thousands of stone circle sites and deeply stratified flint quarries that should be considered and are not.

7-4

Thank you for providing us the opportunity to review this document at a draft stage. If you have any questions regarding these comments, please feel free to contact Mr. C. L. Dill of our staff at (701)-224-2672, or in writing.

Sincerely,

Alotis B. Spiehlman
for

Alotis B. Spiehlman
State Historic Preservation Officer
(North Dakota)

CLD/je

CLD

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 7

- 7-1 Since 1980, BLM and the Office of Surface Mining Reclamation and Enforcement (OSM) have been parties to a programmatic agreement with the Advisory Council on Historic Preservation for protecting cultural properties identified as a result of activities associated with the federal coal management program. Though not designed to address in detail every aspect of the program, this agreement has provided a framework for complying with Section 106 of the National Historic Preservation Act. The Department of the Interior believes that the procedures outlined in the agreement allow full compliance with the act and regulations in 36 CFR 800.
- 7-2 The Analytical Approach section (Chapter 4, page 124 of the draft supplemental EIS) states that production might be the same under different alternatives but that the impacts would not necessarily be the same because of the substitution of more environmentally acceptable coal for coal with higher environmental costs. Because more federal lands could be leased under the Proposed Action than under No New Federal Leasing, the Proposed Action would provide more opportunities for substituting more environmentally acceptable coal for coal with higher environmental costs.
- 7-3 The sentence you referred to on page 137 of the draft supplemental EIS has been amended to read "More significant impacts to the region's cultural resources could occur if No New Federal Leasing is adopted when production levels under the alternatives are essentially the same." Because the general assumption holds when the coal production levels are about the same, this statement does not conflict with the statement referred to on pages 281 and 282. Furthermore, the section comparing major regions in Chapter 5 has been eliminated because the revised coal production forecasts in Table 3-1 significantly differ from those in the draft supplemental EIS. Nationally, 2 million fewer tons of coal per year would be mined under the Proposed Action than under No New Federal Leasing at the year 2000 high production level.
- 7-4 The cultural resource analysis in Chapter 4 is based on inferences drawn from quantitative analysis of surface disturbance and population increases. Table 5-1 compares coal-related acres disturbed and population. Chapter 5 presents a brief qualitative narrative on cultural resources. The qualitative differences that you mention would be dealt with in the regional EISs.
- 7-5 The text in the final supplemental EIS has been revised to reflect this data.

United States Department of the Interior

BUREAU OF MINES

OFFICE OF THE DIRECTOR
 FEDERAL BUREAU OF MINES
 1415 NORTH ST. 10TH FLOOR
 DENVER, COLORADO 80202

Intermountain Field Operations Center

March 28, 1985

Memorandum

To: Jack D. Edwards, Project Leader, Bureau of Land Management,
 Division of EIS Services, 555 Zang Street, First Floor East,
 Denver, Colorado 80228

From: Chief, Intermountain Field Operations Center

Subject: Review of draft Federal Coal Management Program Supplemental
 Environmental Impact Statement (EIS)

Personnel of the Intermountain Field Operations Center, Bureau of Mines, have reviewed the subject document. Our comments concern the management of Federal mineral resources and are most closely related to mineral development.

This document is a supplement to the 1979 Federal Coal Management Program Final Environmental Statement (1979 FES) and is needed because economic and environmental conditions have changed. As stated in the subject document, its purpose is to analyze the potential environmental consequences of continuing the Federal coal management program or of implementing three alternatives to it. The proposed action is to continue the 1979 Federal Coal Management Program and the three alternatives are: (1) Leasing by Application, (2) Preference Right and Emergency Leasing, and (3) No New Federal Leasing.

Although the 1979 FES originally identified six regions and two subregions as having Federally owned coal of major importance, regional coal teams preparing the supplement found a lack of interest in Federal coal leasing in the Denver-Raton Mesa Region and the Oklahoma Subregion. Both areas have been dropped from consideration in the supplement. The supplemental EIS discusses the remaining five regions and one subregion: Fort Union, Powder River, Green River-Hams Fork, Uinta-Southwestern Utah, and San Juan River Regions; and Alabama Subregion.

Mineral resources (other than coal) are adequately described and discussed by region or subregion in Chapter 4 of the supplement (pp. 239-252). With the exceptions of methane and of oil and gas, the minerals that potentially

could be impacted by the development of coal are industrial minerals, including bentonite and other clays, clinker, leonardite, and sand and gravel. In most places, the development of coal probably would take precedence over the development of the industrial minerals; however, in some areas a resource such as sand and gravel could be used in developing the coal.

In light of current problems related to checkerboard ownership patterns in many coal regions, we do not consider No New Federal Leasing as a viable alternative. As pointed out in the supplemental EIS (p. 243), the costs of mining would be increased if companies were forced to leapfrog Federal coal lands. Also, much of the coal on the leapfrogged Federal land may be rendered uneconomic even if the no leasing stipulation were lifted in the future. Thus, No New Federal Leasing, in our opinion, would not represent prudent stewardship of the Nation's minerals.

William Cochran

9

11 March 1985

To: Jack D. Edwards
BLM, Div. EIS Services
555 Zang St, Denver, CO 80228

From: Jim Lewis
3401 Mars Rd NE, ALB NM 87107

Subject: Comments on Federal Coal
Management Program, EIS.
Feb. 1985

The comparison on pages 29-30
show no changes from the Watt
program which is totally inadequate.

Water availability should limit
mining of coal. The effect of coal
mining on water has not been adequately
studied. Reclamation experience has
not been considered in the EIS. There
has been no current mine observations
studied.

The value of the coal obtained
has not been compared to the
lost value of damaged landscape.
The landscape and watershed which
would be lost is in many cases
far more valuable than the coal.
If this lost value were included in
the price of the coal, the coal
would remain in the ground.

RESPONSES TO COMMENT LETTER 9

9-1 The draft supplemental EIS points out that water for coal development does not readily exist (draft supplemental EIS, page 266, "water in the region is fully appropriated"). Whether a source of water should be switched from one use to another is not within the scope of this supplemental EIS, only that coal development would require a switch in water use or an outside source of water. Analysis of the impacts of conversion facilities is also not within the scope of this supplemental EIS.

9-2 See Appendix 5, Other Research. The observations, evaluations, and experiences from 22 western coal mines at 17 locations in North Dakota, Montana, Wyoming, Colorado, Utah, and Arizona assessed by USGS-BLM-OSM-FS are included in the supplemental EIS, and some of these studies have been brought forward to selected references in the text of this final supplemental EIS.

9-3 Many variables come into play when one is considering the value of a landscape or watershed, making it difficult if not impossible to compare their values to that of recovered coal. It becomes even more difficult to compare values when addressing the aesthetic value of the landscape. To do so, one must know precisely where future development, both directly and indirectly related to coal extraction, would occur to place relative values on a landscape's scenic resource. Such locations are not now known. The value of a watershed is just as difficult to determine without knowing more closely where development would occur.

United States
Department of
Agriculture

10 Region 3

Forest
Service

517 Gold Avenue, SW
Albuquerque, NM 87102

Reply To: 1950

Date: APR 01 1985

Jack O. Edwards, Project Leader
Bureau of Land Management,
Division of EIS Service
555 Zang Street
Denver, Colorado 80228

Dear Mr. Edwards:

The Southwestern Region of the Forest Service has reviewed the Draft Supplement on the Federal Coal Management Program. We have no conflicts with the Preferred Alternative. Changes to the existing program do not conflict with our management.

Sincerely,

James C. Overbay
JAMES C. OVERBAY
Deputy Regional Forester

cc:
WO

cc: 60-267-821





11

DEPARTMENT OF THE ARMY
OMAHA DISTRICT CORPS OF ENGINEERS
6014 U.S. POST OFFICE AND COURTHOUSE
OMAHA, NEBRASKA 68102

SENT TO
ATTENTION OF

April 2, 1985

Planning Division

Mr. Jack Edwards, Project Leader
Bureau of Land Management, Division of EIS Services
555 Zang Street, 1st Floor East
Denver, Colorado 80228

Dear Mr. Edwards:

We have reviewed the Draft Supplemental EIS on the Federal Coal Management Program, and our comments are enclosed.

We have addressed Corps permit authorities, water quality, slurry pipelines, other transportation, cultural resources, and population and economic data.

We appreciate this review opportunity. If you have any questions, please contact Steve Rothe of our staff at FTS 864-4579.

Sincerely,

Richard D. Gorton
RICHARD D. GORTON
Chief, Environmental
Analysis Branch
Planning Division

Enclosure

CORPS OF ENGINEERS COMMENTS
Draft Supplemental EIS
Federal Coal Management Program
April 2, 1985

1. Corps Permit Authorities

Any leasee proposing to discharge dredged or fill material into a water of the United States will be required to obtain a Department of the Army permit pursuant to Section 404 of the Clean Water Act. It is also noted that any leasee proposing any work in, on, over or under a Navigable Water of the United States may be required to obtain a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899.

2. Water Quality

Page 259, paragraph 4. The "specified water quality standards" should be listed.

Page 259, paragraph 5. There should be an area-by-area discussion concerning what salts would comprise the increased dissolved solids. The impact downstream of these additional dissolved solids may be significant. The basic assumption that "the solution to pollution is dilution" should not be applied.

Page 260, paragraph 5. The quality of water varies considerably among these aquifers. Is there an obligation to provide water of comparable quality? If not, then this may have a serious adverse effect on the water user.

Page 261, paragraph 7. The statement that changes in surface water quality would be "insignificant" should be supported by descriptions of what mitigation measures are required.

Page 288, Table 6-1. The footnote #4 indicates that the "No" with which they are associated should be "Yes".

3. Coal Slurry Pipelines

The last paragraph of page 160 in the Transportation section states that slurry pipelines appear to have little application in the near future. However, the EIS is scoped to at least the year 2000. It seems reasonable that coal slurry pipelines could be initiated within the next 15 years. Whether on a moderate or large scale, consider that slurry pipelines already exist.

CONSULTATION AND COORDINATION

-2-

11-7 cont. We suggest that some discussion be devoted to the potential impacts of slurry pipelines including construction impacts, water depletions, and water quality impacts.

4. Other Transportation

The section on transportation, pages 161-168, correctly identifies rail as the primary mode for long hauls of coal. It does not discuss the use of unit train shipments of coal from the western regions to the Mississippi River and transshipment to barge, i.e. Burlington-Northern to Keokuk, Iowa. One of the intended customers of the ETSI slurry line, a power plant in eastern Arkansas, awarded the coal contract to the Chicago and North Western Railroad (C&NW). Now the C&NW is faced with three alternative delivery routes (1) all rail, (2) rail to the Mississippi River and then barge, or (3) rail to the Missouri River. The cost of additional grade separations, etc., for unit trains crossing Iowa may be an important consideration. Unit train transportation of coal across Iowa has not reached its ultimate potential. The Iowa Department of Transportation has been studying the impact of unit trains. One of the environmental impacts of unit trains not discussed in the text is noise, particularly in urban areas. As unit trains become more prevalent in more populated areas, the social and economic costs are likely to escalate.

5. Cultural Resources

11-11 Cultural resources are not addressed in the summary.

In anticipation of the Dunn-Nakota project and the southwest water pipeline, there has been extensive research done at the Lynch Knife River Flint Quarries. These quarries, which cover 9,900 acres in and around Dunn Center, North Dakota, have been officially determined eligible for the National Register of Historic Places. This historic district is located within the Fort Union coal region and is considered to be a top priority for preservation by the North Dakota State Historic Preservation Office. Since this significant resource is located within the Fort Union District, it probably could have been addressed as one of the known impacts.

The section about Native American concerns is well done and addresses the pertinent issues.

-3-

6. Population and Economic Data

11-13 Tables 4-2a through 4-2f, pages 126-133, present population and economic characteristics for the several coal regions. Employment statistics for different sectors are of unknown origin and date. Employment data derived from the Federal census is compiled at the time of the census by residence of the worker. Data prepared by the various state employment services is compiled monthly by county of the workplace. The sectoral data presented in these tables is questionable from two aspects. First, it should be indicated whether the data is for the residence of the worker or residence of the workplace. Secondly, the data is not representative of several sectors because it is for April - the time of the Census - or it represents an annual average, and in either case does not present an accurate representation of the broad seasonal variations which take place, particularly in the agricultural and construction sectors. It is suggested the state employment service data be used and seasonal variations be indicated for those sectors most susceptible.

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 11

- 11-1 The addition to Table 1-9 of the final supplemental EIS has been made as suggested. (This was Table 1-8 in the draft supplemental EIS.)
- 11-2 The federal water quality standards appear in 30 CFR 715.17 and are also reflected in each state's regulations. (See Chapter 1 of the draft supplemental EIS for information on state and federal regulatory programs.)
- 11-3 The salts usually identified by researchers are sodium sulfates and bicarbonates. The draft supplemental EIS (page 259) states that increases in dissolved solids would be significant downstream from a mine until water is diluted by streamflow from undisturbed areas. This distance would vary from place to place depending upon the amount of change in dissolved solids and the relative amounts of streamflow from mined and unmined areas. The impact is considered insignificant when it reaches the point where the increase cannot be measured. The draft supplemental EIS, however, later states (pages 266-267) that where many of these insignificant increases are accumulated in one basin, significant impacts may occur at the regional level.
- 11-4 An obligation exists to provide water of comparable quality, but, as the draft supplemental EIS states (page 260), changing water sources may affect the water user's operation and maintenance costs.
- 11-5 The mitigation measures referred to are those required by federal and state coal regulations. Chapter 1 of the draft supplemental EIS provides information on state and federal regulatory programs.
- 11-6 The footnote should read "hundreds or thousands of years." According to a geochemical model commonly accepted to describe this ground water quality impact (Groenewold and others 1980), once mine spoils are replaced, the accelerated oxidation reactions should subside and the more soluble minerals would be leached. A "no" was used to describe ground water quality impacts because the increased mineralization process would be reversed. An extremely long time, however, would be needed to retrieve the original ground water resource. "of" has been changed to "or" in footnote 4 of Table 6-1.
- 11-7 The role of the coal slurry pipeline as a transportation mode within the next 15 years is debatable. One coal slurry pipeline exists, but active plans for developing others are limited. In addition, the purpose of this supplemental EIS is to address the impacts of coal development on existing environmental factors. BLM recognizes that the presence of coal slurry pipelines could affect the location of coal development. But because the locations of these pipelines are unknown, the analysis of their impact on the environment does not fall within the scope of this supplemental EIS. If these pipelines require federal authorization, they will undergo National Environmental Policy Act compliance procedures before being authorized.

- 11-8 BLM believes that the cited discussion is adequate for the purposes of this supplemental EIS and related decisions. This level of detail is more appropriate to regional leasing EISs.
- 11-9 The amount (duration) of noise produced would increase as coal production increases, but at the programmatic level of analysis site-specific impacts cannot be pinpointed.
- 11-10 See response to comment 11-8.
- 11-11 A discussion of cultural resources appears on page 6 of the Summary of the draft supplemental EIS.
- 11-12 The supplemental EIS text has been revised to reflect this data.
- 11-13 See Appendix 4, page 319 of the draft supplemental EIS for the sources used in the economic analysis. Employment data was taken from the U.S. Department of Commerce, Bureau of Economic Analysis (1984a), Employment by Type and Broad Industrial Sources.

©

COMMENTS AND RESPONSES

12

April 3, 1985

Jack Edwards
Bureau of Land Management
Division of EIS Services
555 Zang Street, First Floor East
Denver, Colorado 80228

Mr. Edwards:

I am submitting comments on the Department of Interior's Draft Environmental Impact Statement for the Federal Coal Management program. I would like to note that this document was much easier to read than the "Proposed Program Changes", I appreciate this. Since I am representing the Utah Chapter of the Sierra Club, my comments will deal with the Uinta-Southwestern region. I would like a copy of the Final EIS and any other information pertaining to the issue of federal coal leasing.

Socioeconomics:

The major consideration when mining coal in this region is protecting the tourist attractions, the natural environment. The tourist industry will be around long after the coal is gone. The few agricultural areas need to be maintained and not destroyed by the impacts of coal mining. Agricultural land in this area is too scarce to be taken for granted. Agriculture is a more permanent economic base than coal mining, thus it should receive a higher priority. The major conflict I foresee in this region is water. Water is in limited supply in this region, without water there is no life. If water goes into mining it will be taken from someone else; irrigation and drinking supplies. Although more jobs will be created by

-2-

coal mining, this does not mean the local residents will be qualified enough to receive the available positions. Since mining is a temporary industry local residents should be forewarned that they will need other job skills to fall back on. A mine can give a false sense of economic security for a small town. The greatest problem with new housing as I see it is if it is built on farmland. This would increase property taxes and eliminate land for growing food. Due to the unique subculture in this region, an increase of residents from outside of this area could have a difficult time adjusting. Also this would cause changes in the social makeup of these communities.

Transportation:

Since water is in such short supply in this region a slurry pipeline would take too much water from agriculture and culinary uses. Transportation along US 6 has been restricted due to mud slides. This is a potential problem for a section of this major transportation route. Increase use of highways will cause a faster deterioration of road surfaces. This will add an additional burden on local tax payers for repairs. US 89 runs through several small communities. Increased traffic will pose a safety problem for the local residents. The trains moving through Spanish Fork Canyon, parallel to US 6, are also susceptible to mud slides. Some of the coal in this region is inaccessible by road or train. Thus a major impact in any increased mining would be the construction of railroads and roads to the mine sites.

Health and safety:

Recently there was a major coal mining accident, Wilburg Mine explosion and fire in this region. There needs to be much more care taken with safety precautions in this region. The State of Utah has been lax in enforcing OSM regulations with regard to

CONSULTATION AND COORDINATION

-4-

they need extra protection. Agricultural land has a greater long term benefit than land consumed by coal leasing.

Wildlife:

This entire region has a potential for Golden Eagle nesting sites, peregrine falcon eyries, and Bald Eagle wintering concentrations. Much of this area has a potential of being mountain lion habitat. Special care needs to be taken so the habitats of these species are not disturbed. Deer hunting in this region has a positive economic effect on local communities. A careful study of this area various ecosystems must be observed when reclaiming disturbed lands. Care needs to be taken when erecting tall structures, so they don't interfere with migrating bird routes.

Visual Resources:

One of the unique characteristics of a portion of this region are the scenic panoramas. Care must be taken not to interfere in this area. The tourist economy could be adversely impacted. Coal mining within sight of view points is unacceptable within this region. Any change of visual impact in this region could have significant consequences.

Recreation Resources:

Leases for coal mines should be issued for land in non-agricultural and non-scenic areas first, since the demand for coal is low at the present time and coal mining would infringe on other more enduring economic resources. Opening up new roads and trails to off-road vehicles is not a positive consequence of mining.

Wilderness:

The Forest Service has established the boundaries of it's wilderness areas in this region. BLM is currently studying

-3-

surface violations of coal mines in this region. This area needs to be monitored better, to lessen the health and safety impacts.

Native American Issues:

I am concerned here about surface owner consent and how this is being applied with Native Americans. Authorization by the surface owner should be a primary consideration in leasing an area for coal mining.

Air Resources:

There are several national parks and monuments within this region that have a higher quality of air standards. Thus special care needs to be taken when coal mining to prevent air pollution. I am concerned about the creation of acid rain in this region by coal mining operations.

Soils and Vegetation:

What assurances are there that adequate soil studies are being conducted to identify problems in this area? The State of Utah has had a history of not enforcing violation of the coal mines in this state. Problems in establishing coal mines need to be identified as early in the planning process as possible, to save time and expense.

The soils in this region are very fragile, with a thin layer of topsoil. Topsoil takes a long time to be created in this ecosystem. Thus special care must be taken when disturbing it. Vegetation has a more difficult time surviving in this dry region. Thus extreme care must be taken to disturb as little vegetation as possible and to replace the vegetation in disturbed areas. I strongly support the protection of endangered plants using the already established unsuitability criteria.

Agriculture:

The areas suitable for agriculture in this area are so

COMMENTS AND RESPONSES

-5-

areas to be included within its wilderness system. I am concerned that an area was not studied for wilderness because it was located within a PRLA area.

Cultural Resources:

This area has many cultural resources both archeological and pioneer historical sites. My concern here is that actual 100% surveys are being done in searching for cultural sites rather than predictive modeling, where only a percentage of the land is surveyed.

Water Resources:

The importance of water in this region cannot be overemphasized. Ground water as well as aquifers must be used wisely and special care used not to contaminate the water itself.

Some of my concerns about this program itself would include the Regional Coal Team's. What guarantee is there that the RCT's will involve and inform the public of their decisions. Will they seek public comments? Will the quality of work performed by the RCT's be adequate, and consistent? Will these teams be adequately funded on the state level? Who will be monitoring the RCT's activities? Who determines the members of the RCT's?

Thank you for reviewing these comments and concerns.

Sincerely,

Lucy Ainsman

Lucy Ainsman, Coal Issue Specialist

Utah Chapter, Sierra Club

2135 Preston Street

Salt Lake City, Utah 84106

(801) 487-2704

RESPONSES TO COMMENT LETTER 12

- 12-1 Appendix 5 includes a discussion of topsoil reconstruction and stockpiling techniques used in reclaiming surface-mined lands. This appendix cites several references relating to soil studies.
- 12-2 Except for the question of funding, the issues raised by this comment are addressed in the response to Category 6, Regional Coal Teams, in the Categorical Analysis of Comments and Issues in this chapter. BLM does not foresee any fiscal shortages that would affect state-level participation of an RCT member or nonvoting member appointed to assist the RCT on special projects or issues.

13 QUIVIRA RESEARCH CENTER

3017 Commercial NE
Albuquerque, New Mexico 87107
(505) 344-2755
April 6, 1985

Jack D. Edwards, Project Leader
Bureau of Land Management, Division of EIS Services
555 Zang Street, First Floor East
Denver, CO 80228

Dear Mr. Edwards:

I have reviewed the 1985 Federal Coal Management Program DEIS Supplement and have the following comments:

It is distressing to observe that this DEIS is even more deficient in its treatment of San Juan River Coal Region cultural resources than was the initial (1983) San Juan River Regional Coal FEIS.

It is apparent that the description of the affected environment (p. 236) was prepared after only the most cursory inspection of the final SRRRC FEIS (1984), by a preparer who was obviously less than knowledgeable in the area. Only a handful of Chacoan sites are mentioned, plus a few Chacoan road segments. No mention is made of the Paleo-Indian, Archaic, non-Chacoan Anasazi, or Navajo sites known to exist in the coal areas of the region. BLM possesses this information in-house, as evidenced by data contained in the draft Rio Puerco Resource Management Plan, pp. 3-19, 20; Appendix C; and Appendix H.

Further, the area called the San Juan River Coal Region in this DEIS (see Map 4-3) is greatly expanded over the area so labeled in the 1984 FEIS (see Map 1-1 therein). BLM's Socorro office has performed extensive surveys in the San Augustin coal area and has located numerous sites. However, to judge from this DEIS, not a single site is known in the area. At minimum, the EIS needs to contain information on numbers of known and predicted sites by site type for the entire region.

There are numerous other instances in the DEIS that suggest BLM may be taking less than a candid approach to coal leasing. I offer the following examples:

1. In Item D, Table 1-7, p. 29, the justification for removal of National Register-eligible properties from consideration in the application of Unsuitability Criterion 7 is stated as:

To eliminate an unneeded regulation, because the application on existing leases had nearly always been postponed until mine plan review. The criterion of amendment conforms with Office of Surface Mining Reclamation and Enforcement criteria for designation of lands as unsuitable during mine plan review and reflects court decisions on the Surface Mining Control and Reclamation Act (SMCRA).

This is essentially a statement that says "Since we routinely ignore SMCRA's intent to apply the unsuitability criteria very early in the leasing process, during Land Use planning, we will alter the statement of intent and can then pretend to be in compliance with the law." Further, since OSM procedures are themselves fraught with illegalities and obvious ploys to circumvent federal law, holding OSM up as an authority is hardly a compelling argument.

2. Although BLM has recently gone through flurries of activity via a vis the OTA report, and this DEIS itself purports to modify "the federal coal management program in response to recommendations by...the Office of Technology Assessment," the DEIS, in fact, ignores the substance of OTA's recommendations. The OTA report stresses repeatedly that the Mine Plan stage is too late in the process. To quote only one of OTA's remarks, the OTA 1984 report states, on p. 15:

...It is OTA's judgment that, in many cases, BLM's pre-sale data and analyses have been inadequate to base a decision on whether...tracts...can be developed in an environmentally compatible manner....This concern extends to decisions that are referred to the mine plan stage, in part because decisions at that stage are intended to accommodate coal development, rather than exclude areas from mining.

3. The DEIS is in error when it says the change in Unsuitability Criterion 7 "reflects court decisions" on SMCRA. In fact, as the OTA 1984 report notes (p. 84), "This rule change was a direct response to the debate over inclusion in the...Dune Center" lease tract in Fort Union of portions of the Knife River Flint Quarry--a site eligible for listing." The BLM wording should be changed to read "...reflects one court decision in one coal leasing region."

4. On p. 236, the DEIS states that "...Not all sites located...at the mine plan stage are likely to be amenable to mitigation through data recovery." Presumably, this means that such sites will be treated without data recovery. If so, BLM should clearly state this is its intention.

5. On p. 397, the Director of BLM states:

Pursuant to 43 CFR 3461.3-(b)(2), tracts with data insufficient for the final application of any unsuitability criteria (except criterion 19) will not be included in the final EIS. As a result of the addition of a proposal responding to the report by the Office of Technology Assessment, tracts lacking other environmental data needed for adequate impact analysis will also be excluded from the final EIS....

This looks encouraging for cultural resources, since BLM states in several places that data are inadequate for decision making (e.g., p. 236, p. 281). However, the following sentence on p. 397 ends "(except data normally not acquired until mine plan stage)," which is presumably BLM's way of announcing

COMMENTS AND RESPONSES

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ing that it plans to avoid both compliance with SMRA and responsiveness to OIA's repeated references (e.g., OIA 1984, p. 75, p. 106) to the lack of adequate cultural resource data in the San Juan Coal Region and to the fact that deferring decisions on Unsuitability Criterion 7 to the Mine Plan stage is much too late in the process. It seems odd that BLM is willing to accede to OIA's findings on many other concerns, but not their recommendations on cultural resources. The public deserves a statement either that BLM plans to comply with SMRA's intent and with OIA's recommendations on cultural resources or that it plans to circumvent them.

I appreciate the opportunity to comment on this document.

Sincerely,


Carol J. Condie

RESPONSES TO COMMENT LETTER 13

- 13-1 The draft supplemental EIS is a programmatic document that deals with six coal regions and does not mention specific sites except in the San Juan River Region. The sites are mentioned to serve only as examples for the lay reader who might be able to relate to the well-known Chacoan phenomenon. The draft supplemental EIS does not attempt to be exhaustive. Cultural variations in time, space, and form were considered generically for all coal regions. Detailed information concerning cultural variation in the San Juan River Region appears in the San Juan River Regional Coal Final EIS (BLM 1984c).
- 13-2 Although BLM's Socorro District Office has conducted extensive inventories in the San Augustin coal area and has found many sites, the text of the supplemental EIS must deal with six regions, presenting a summary, not a detailed account. For the San Juan River Region, the entire region shown on Map 1-2 had to be addressed.
- As stated on page 236 of the draft supplemental EIS, many areas lack enough inventory data to allow adequate analysis. BLM believed that a lack of complete site information would severely weaken any attempt to precisely predict site locations.
- 13-3 BLM recognizes that there have been problems in the past in correctly applying the unsuitability criteria at appropriate times during the planning process. Both the Review of the Unsuitability Criteria in Federal Coal Leasing (BLM 1985d) and Appendix 1 in the final supplemental EIS recognize this problem and attempt to better define the appropriate sequence of applying the program's four screens during land use planning.
- In 1982, the Office of Surface Mining Reclamation and Enforcement's (OSM) language addressing the application of the unsuitability criteria was changed to reflect a policy decision by the Department of the Interior to consider only publicly owned, National Register-listed sites as defined by Section 522(e)(3) of SMRA. The scope of BLM's unsuitability criterion 7 was later revised to conform to OSM's language. Reference to other types of cultural resources covered by National Historic Preservation Act, the American Indian Religious Freedom Act, and Section 522(a)(3)(B) of SMRA are covered under the multiple use trade-off screen that is to be applied during land use planning. This screening would address all cultural resources that have not been previously reviewed as part of the unsuitability screening.
- 13-4 See response to Category 4, Data Adequacy, in the Categorical Analysis of Comments section of this chapter.

CONSULTATION AND COORDINATION

13-5

In 1980, the Federal District Court addressed a number of legal aspects of the coal unsuitability criteria system. Among the issues covered was the legal basis for the language of criterion 7, which at the time referenced privately and publicly owned properties listed on or eligible for listing on the National Register. Part of the court's decision, however, noted that the Secretary of the Interior had suspended the particular regulations addressing the unsuitability of cultural properties for leasing. The court, therefore, did not directly address the legal basis of criterion 7's language. Any reference to a court decision as a basis for a change in criterion 7 is an error.

13-6

This statement is intended to mean that BLM recognizes that some sites are amenable to data recovery and that BLM will consider a range of alternatives for dealing with cultural resources, from prohibiting development to sacrificing the site. The process, however, would include the consideration of all options under Federal regulations.

13-7

The 1980 Programmatic Memorandum of Agreement among the Advisory Council on Historic Preservation, BLM, and the Office of Surface Mining Reclamation and Enforcement requires BLM to complete or have completed a literature search and enough levels of field inventory to identify important cultural properties before leases are issued. Additionally, stipulations may be attached to the lease requiring more survey and evaluation work before mine permit approval in areas where not enough information exists to make a reasoned decision on impacts to resources. BLM is also responsible for applying criterion 7 to cultural properties identified as a result of the planning process.

COMMENTS AND RESPONSES

14

20 March, 85

To: Jack Edwards

BLM, Our EIS Service

From: James V. Lewis, Professor, Emeritus
Math Dept, University of NM, 87131

Subject: Comments on Federal Coal
Management Program, EIS, Feb 85

DOI should re-write the environment
analysis and cancel the coal program
Basin lease sale.

Coal has been overleased. Only 1/4
of present leases have been produced.
There is no need for new leases.
Price of coal has been driven down.
There is no competition in the
coal industry. Industry should
not be given lower royalty rates.
Return to a market economy.
There is no competition now.

Use four land use screens:
sustainability criteria, surface owner
consultation, multiple use resource
trade-offs, elimination of low-
potential coal lands.

BLM should make use of USGS
EMRIA Reclamation Potential Studies
to screen out low reclamation potential
coal lands.
Substantial public education efforts
are needed for real public participation

14-1

14-2

RESPONSES TO COMMENT LETTER 14

14-1 BLM continues to use the information developed by the USGS EMRIA program studies. In addition, BLM annually funds continuing studies known as Technical Investigations, which examine the specific hydrologic factors of the selected study areas of the federal coal regions. This hydrologic information is useful to the planning team's application of the multiple resource trade-off screen of coal land use planning. See Appendix 5 for more detail on EMRIA studies.

14-2 BLM agrees that public education is needed for real public participation. Through its local and state public affairs offices, BLM seeks to expand the public's understanding of its program responsibilities for the public lands.

CONSULTATION AND COORDINATION

15

Route 9, Box 91-F
Santa Fe, NM 87501

Mr. Jack D. Edwards
BLM Division of EIS Services
555 Zang Street
Denver, Colorado 80228

Dear Mr. Edwards:

I'm sorry I was unable to attend the March 20 hearing in Albuquerque on the draft EIS supplement to the Federal Coal Management Program. I have fought my way, as well as possible, through the huge EIS document and the supplement on unsuitability criteria.

On the whole I am disquieted by these documents. On subject after subject, they seem to present a fairly rational analysis, then conclude in moving in a direction opposite to that which is indicated. Examples:

. Demand for San Juan Basin coal is agreed to be very limited, and capable of being filled by existing mines. But further leasing is advocated.

15-1 . The need for environmental assessment of the San Juan PRLAs is mentioned, but the BLM seems to stick to the position that the PRLAs must be honored regardless.

15-2 . Discussion of land reclamation in semideserts like the San Juan Basin makes it clear that chances of success are dubious, at best. But this is brushed aside in favor of prognostica-

2 ...

15-2 cont. tions that continued research, plus helpful official inspections, plus the good intentions of mining companies, will solve all problems. I lack confidence in what can be accomplished by the reduced force of official inspectors, and in the saintliness of the companies. The recent scandal involving a New Mexico mine reinforces my skepticism.

15-3 . Continued protests by Navajos, who I understand attended the March 20 meeting in force, indicate that their serious problems have not been dealt with. Certainly they should have a voting presence on the regional teams.

15-4 . There seem to be a zillion loopholes for exceptions that can be granted with little publicity. A good example is the way that most of the unsuitability criteria can be bypassed or ignored.

15-5 . If there is anything proposed that would prevent a recurrence of the Powder River-Fort Union giveaways, I failed to detect it.

For the area I know something about, the San Juan Basin, the new documents are simply unsatisfactory.

Sincerely,

Roland A. Goodman
Roland A. Goodman
vice president, Sangre
de Cristo Audubon Society

April 5, 1985

RESPONSES TO COMMENT LETTER 15

15-1 In *NEDC v. Berklund* (609 F.2d 553) the court ruled that the Secretary of the Interior has no right to refuse to issue a coal preference right lease if an applicant shows a discovery of coal in commercial quantities. The court also ruled that environmental costs have to be considered as part of the commercial quantities determination. The Department of the Interior must comply with these rules in processing coal preference right lease applications.

Although the Secretary has the discretion to seek alternatives to lease issuance, such as exchange or purchase of the lease rights, these alternatives must be authorized by Congress. Without such authorization, the Secretary has no choice but to issue leases that meet the commercial quantities test.

15-2 According to the San Juan River Regional Final EIS (BLM 1984c), experience in the San Juan Basin has shown that (1) reclamation and revegetation generally apply to lands subject to coal leasing, (2) revegetation on lands leased for coal mining will be technologically and economically feasible, and (3) the worst case is likely for only a small amount of the land that would be affected by mining.

This region has a wide range of soils, which are discussed on a general basis in this supplemental EIS. See Appendix 5, Permitting of Mining Operations, for a discussion of SMCRA requirements for permit applications and reclamation plans and for the detailed resource inventories required. Mining would not be allowed where reclamation would not be technologically feasible or potentially successful. Energy Minerals Rehabilitation Inventory and Analysis (EMRIA) studies have identified areas where reclamation would be difficult and where reclamation potential would be low.

Studies, research, and experience have found that reclamation of lands to premining conditions is possible in the arid West.

Moreover, ongoing research will concentrate on specific conditions and supplement research needs.

15-3 The draft supplemental EIS deals with alternative frameworks for a federal coal management program. Issues that are specific to one region will be addressed locally after the Secretary of the Interior makes his decision on which program to adopt. BLM is however, adding to its discussion of Native American issues in the final supplemental EIS to show more sensitivity to issues expected to be featured in the regional EISs.

15-4 By regulation (43 CFR 3420 and 3461), BLM cannot ignore the application of unsuitability criteria during land use planning. The Department of the Interior has proposed rulemaking that restores in the coal rules the public comment period on the results of applying these criteria. Each of the 20 criteria have an exemption that protects the rights of lessees who obtained their leases before a fixed date associated with the passage of the Surface Mining Control and Reclamation Act in 1977. The surface manager may also use his discretion in applying specified exceptions. This exception provides for flexibility in managing natural resources. A detailed discussion of unsuitability issues appears in Appendix 1, A Review of the Unsuitability Criteria in Federal Coal Leasing.

15-5 Appraisal and lease sale procedures have been improved and strengthened in response to recommendations of the Linowes Commission (Linowes and other 1984). See Chapter 1, Table 1-5. A Guide to Federal Coal Property Appraisal has been developed with full opportunity for public comment and is included in Appendix 7 of this final supplemental EIS.

Box 641
Honolulu, HI. 96809
10 March 1985

Jack D. Edwards, Project Leader
Bureau of Land Management, Division of EIS Services
555 Zang Street, First Floor East
Denver, CO. 80228

Dear Mr. Edwards:

Subject: Draft EIS Supplement, Federal Coal Management Program
(February 1985)

Congratulations. This is a well organized, well written EIS, and I appreciate that. However, I am particularly concerned about the impact coal exploration, leasing, and mining activities are having on the archaeological resources in New Mexico, and about the failure of this Draft EIS to adequately consider these impacts.

The purpose of the NEPA process is to provide for a reasonable assessment of environmental impacts. The first step in the assessment process is an accurate description of the environmental resources to be affected. This document does not do this with regard to cultural resources, especially for the New Mexico area of the San Juan River Region with which I am most familiar. The statement in this draft EIS supplement on the affected environment (pp 233-38) is superficial and misleading. Describing the affected environment as an abstract list of culture periods is akin to describing coal as a black rock. There's a lot more to coal than being a black rock, and there's a lot more to archaeological resources than being the source of scholarly theoretical abstractions about human history. Archaeological sites and their environment, in New Mexico, are tangible environmental resources with educational, spiritual and public uses that have a considerable impact on daily community life in the state. People are employed to protect and study these resources. People donate their leisure time to the study and enjoyment of these resources. People. Not just scholars in an ivory tower. New Mexico is not called the Land of Enchantment just because of its pretty sunsets. Canyons, and mesas, and mountains, and plains covered with ancient ruins is part of the enchantment. This is the environment to be affected, not the Paleo-Indian period as the draft EIS supplement implies.

The archaeological resources in New Mexico have international scientific significance. The quality of the resources in the state, the research potential, the public use potential, is markedly superior to the archaeological resources found in other parts of the United States and the world, yet this draft EIS supplement implies that all archaeological sites are the same as far as management is concerned.

The discussion of impacts in the San Juan River Region is particularly misleading. I do not agree that "Many areas with this region lack enough cultural inventory data to allow adequate analysis of potential impacts." On the contrary, enough archaeological study has been done in New Mexico to verify that archaeological sites are found in all parts of the state, that the density of sites is high, that the state of preservation is high, that the research potential is high, and that the entire state could easily qualify for the National Register of Historic Places as a district nomination. Of course more survey work needs to be done in New Mexico. But it is misleading in a document of this kind to imply that future survey work will identify areas without archaeological significance when this is not the pattern for survey work in New Mexico. A document of this kind should recognize the fact that the proposed and existing mining area contains archaeological resources that some people consider to be highly significant, and it would be preferable if alternate sources of energy be found and that mining be conducted in other areas. This document needs to say more than "...the San Juan River Region has the most cultural sites and is expected to sustain more impacts than the other regions under the Proposed Action or alternatives." (p 281) The difference is not just quantitative. There are qualitative differences in the significance of the scientific archaeological resources in the San Juan Region and there are qualitative differences in the importance of the ruins in the daily lives of the people in the State. Call a spade a spade. Chaco Canyon National Monument is not in Virginia.

The decision to mine may be unavoidable. But it should be made honestly. I honestly care about visiting, studying and preserving (for others to see) the archaeological sites in New Mexico. The sites have been an important part of my life up to this point, and I look forward to the future with excitement. I do not look forward to returning to my home and seeing it paved over and blasted away. This draft EIS supplement was obviously written by someone who doesn't care about these sites and doesn't understand their significance.

Ideally this document would at least make an attempt to identify areas in the San Juan Region which should be set aside as preserves and wilderness areas where no mining or mineral exploration of any kind would be allowed because of the significance of the archaeological resources in the area. This would be as such a preserve. Sadly, this document isn't willing to compromise. It takes for granted a piecemeal, mitigation approach that will insure that some surveys and salvage excavations will be done, and that perhaps a few isolated sites will not be destroyed. It does not give us the option of recognizing that there are large areas in the San Juan Region that are more important to some people than black rocks that are now being called coal. We used to call it low-grade shale a few years ago. I do not believe this document satisfies the intent or the legal requirements of the National Environmental Policy Act with regard to its treatment of the archaeological resources in New Mexico.

Aloha,



Earl Neller

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 16

- 16-1 Please consider the nature and purpose of this draft supplemental EIS and the original 1979 document (BLM 1979a), which are programmatic. For the level of detail in which you are interested, consult the regional or tract-level EISs for the San Juan River Region.
- 16-2 This statement has been removed from the final supplemental EIS.
- 16-3 BLM appreciates these concerns but believes they are more appropriate for consideration in the land use planning process and any later leasing.

COMMENTS AND RESPONSES

17 March 2 - 1985

United States

Department of the Interior

This is in Reply to Federal Coal Management Program -

Please don't think the Bureau of Land Management

can do any thing with the Coal Management

or even watch how they have managed the

Public Lands for the past 50 years. And it has

lost 90% of its value for Coal.

The only way to handle the Public Lands

is under their control. At 29 May - 20 May 1982

the Act of December 29 - 1916 - 34 Stat - 962

15 - 1916 - 40 - This will put the Lands in

the hands of the Private Owner. And in the

country - And these will be turned for Taxes to the

State. More to come. The way of the

State. The Tax, it for 50 years for 40 - 1916 -

40 - 1916 - 40 - This will put the Lands in

the hands of the Private Owner. And in the

country - And these will be turned for Taxes to the

State. More to come. The way of the

State. The Tax, it for 50 years for 40 - 1916 -

I have never seen any thing that the D L M handled that was successful. They have never had a service in mining or ranching - But you had to pay them for what you want. And they tell you how to do it and how to do it.

You pay for grass. And they sell. Feed for live stock - When they don't have any thing to sell. The Bureau of Land Management is in constant. It is a socialism that is where every thing belongs to the Government. And is run by the Government. That is why the Coal Management doesn't work. It takes private enterprises and that means by the people.

Sincerely

E O Bierer

406 Miner Road

Socorro, NM 87801

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 17

- 17-1 The Federal Land Policy and Management Act of 1976 repealed the cited laws and provided a framework for the multiple use management of federal lands. This framework forms the basis of the Proposed Action and leasing alternatives in this supplemental EIS.

COMMENTS AND RESPONSES

18

BOARD OF COMMISSIONERS
DELTA COUNTY, COLORADO

1 April 1985

Jack D. Edwards, Project Leader
Bureau of Land Management, Division of EIS Services
555 Zang Street, First Floor East
Denver, CO 80228

Dear Mr. Edwards:

Delta County has reviewed the Federal Coal Management Program - Draft Environmental Impact Statement Supplement. As of this time we have no special preference for which action alternative is selected for future coal leases. We do feel the federal coal leasing program should include some criteria which evaluates the continued operations of mines which are presently producing coal. Delta County is not desirous of a program which would hinder the production and expansion of existing lease tracts.

We appreciate the opportunity to comment on this environmental statement.

Sincerely,

Roger M. Blouch

Roger M. Blouch
Chairman

RMB:VCE:ak

District No. 1, Roger M. Blouch
District No. 2, Norman F. Kehlmeier
District No. 3, Charles V. Hallenbeck

COUNTY COURTHOUSE

FIFTH AND PALMER, DELTA, COLORADO 81416

PHONE (303) 874-7595

RESPONSES TO COMMENT LETTER 18

The evaluation of the continued operation of mines that are producing coal is a function of more localized demand analysis and will be considered by regional coal teams.

18-1

CONSULTATION AND COORDINATION

19
BUREAU OF LAND MANAGEMENT
U.S. DEPARTMENT OF THE INTERIOR

April 10, 1985

Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
355 Zang Street
First Floor East
Denver, Colorado 80228

RE: Comments on Draft Environmental Impact
Statement Supplement, Federal Coal
Management Program (the "DEISS")

Dear Mr. Edwards:

The most notable deficiency in the subject DEISS from the perspective of the Navajo Tribe is the failure to address the affected environment and impacts for consequences of the proposed actions and alternatives on Native Americans. For each of the other categories of interests (i.e., socio-economics, transportation, health and safety, air resources, soils and vegetation, agriculture, wildlife, visual resources, recreation resources, wilderness, cultural resources, mineral and paleontological resources, and water resources), the DEISS makes some attempt to separate out the affected environment and the impacts; "Native American Issues" stands alone in this regard. The List of Preparers shows why: only a landscape designer was assigned to Native American issues.

This treatment of the environmental concerns of Indians -- where the DEISS simply lists (without discussion) concerns expressed by Tribes -- is difficult to understand given the trust relationship owed to Tribes and individual Indians and given the admittedly serious and legitimate economic and environmental interests of Tribes. (See DEISS, at 174). Regrettably, the denigration of Indian concerns has been a consistent feature of the federal coal management program in the San Juan Basin, where, for example, despite the recommendations of the State of New Mexico, the Navajo Tribe has not been given any meaningful role in the Regional Coal Team and where, as another example, prior environmental documentation has completely ignored duties owed to allottees (for whom the United States holds the surface of the allotments for their "sole use and benefit"), has ignored the duties imposed by 42 U.S.C. §1996 (the American Indian Religious Freedom Act), and has ignored reasonable

Jack D. Edwards
Comments on DEISS
April 10, 1985
Page Two

stipulations proposed by the Navajo Tribe to protect the legal rights of native Americans and to mitigate socio-economic impacts which will peculiarly rest on Navajos in the San Juan Basin. The 1980 census showed that over 90% of the people to be directly affected by the proposed coal leasing are Native Americans.

Further leasing of federal coal, as admitted throughout the DEISS (see P. 59) and as known generally, is not warranted by any market factors. It is plainly an inappropriate time to sell federal coal -- both from the perspective of the citizen-owner of federal coal and of the Indian Tribal beneficiary of the federal trust relationship. As you know, the Navajo Tribe currently has under lease in excess of one billion tons of strippable coal in the San Juan Basin which, because of the saturated coal market, cannot be sold. Further, federal and leasing would depress the value of tribal coal below a realistic fair market value, would make it increasingly difficult to market Indian coal, and would likely result in greater environmental degradation in the future, as lessees of the various tracts struggle to sell enough coal to satisfy diligent development criteria in a saturated market.

The Navajo Tribe agrees generally with the comments of the New Mexico Energy and Minerals Department, with which we have had a cordial and productive working relationship. Specifically, with respect to the statement that "the coal leasing program should be abolished," (NEMD, p.3), we agree that the data support such an alternative. We also agree that the most reasonable alternative -- delay of any federal leasing pending collection of accurate baseline data -- has not been considered by the Department of the Interior, at least in the EIS context. OTA plainly perceived the deficiencies of leasing without such data, and the intent of Congress in establishing unsuitability criteria has been violated by the deferral of application of these criteria (notably cultural resources, cemeteries, trails, and endangered species) in the San Juan Basin. The alternative of delaying any further coal leasing until such data is gathered should be considered in a second DEISS, and (with respect to PRLAs) would allow consideration of environmental costs as mandated in the Berkland litigation.

The apparent decision not to have any site specific environmental documentation for the New Mexico PRLAs (DEISS, at 27) violates NEPA. Plainly, neither the EA for PRLA leasing in New Mexico nor the regional studies provides the information needed under NEPA or under the duties mandated by Berkland.

- (1) For a fuller explanation of the reasoning behind the need and desirability of collecting such data, see attachment Exhibit A, incorporated herein by reference.

Jack D. Edwards
Comments on DEISS
April 10, 1985
Page Three

None of the matters suggested by the Navajo Tribe in the scoping stage of the DEISS were addressed adequately; most, not at all. See attached Exhibit B. With respect to the end use questions (Exhibit B, ¶3), the World Research Institute has recently supplemented the studies, concluding that areas in the West are suffering from and susceptible to increased damage from acid precipitation. How long can the Department avoid concerning itself with alternatives to burning coal?

19-5 The DEISS fails to even propose alternatives regarding the disruptive leasing of split estate lands. This should be done.

The Navajo Tribe has read and analyzed the comments of the State of New Mexico, Rio Grande Chapter of the Sierra Club, Environmental Defense Fund, and the Southwest Research and Information Center. Rather than restate the matters addressed by these groups, we incorporate these comments by reference.

In summary, the Navajo Tribe (as well as other Tribes and Native Americans) has once again been ignored in the formulation of meaningful procedures, mitigation measures, alternatives, and stipulations. The DEISS shows that the only real results of any further leasing would be to allow speculation (in violation of the will of Congress), a skewing of the energy marketplace, denigration of Indian interests, unnecessary and unplanned environmental dislocations in the medium term, and callous and cruel treatment of individual Native Americans in the San Juan Basin to whom the United States owes solemn duties. The Navajo Tribe again recommends (with the Navajo Area Office) adoption of the proposed lease stipulations sent to Mr. Luscher on June 15, 1984, if ELM must maintain its patently unnecessary leasing program.

Thank you for this opportunity to comment on the DEISS.

Very truly yours,

P. E. Frye
Pál E. Frye
Post Office Drawer 2010
Window Rock, Arizona, 86515
Telephone: (602) 871-6933

Attachments

PEF/mw

December 11, 1984

Bureau of Land Management
Assistant Director
Solid Leaseable Minerals (620)
18th and C Street
Washington, D. C. 20240

Re: Unsuitability Criteria

Dear Sir or Madam:

This letter is sent on behalf of the Navajo Tribe of Indians in response to the request for comments on the application of the 20 unsuitability criteria. As the O.T.A. report noted, 1 the Navajo Tribe should play an "integral role" in the implementation of any coal leasing programs in the San Juan Basin. These comments supplement those summarized in the O.T.A. report at 122-124.

The Congressional expectation in listing unsuitability criteria in S.M.C.R.A. has been largely frustrated by B.L.M. in New Mexico. Orderly planning would involve: first, the inventorying of resources; second, the evaluation of the inventory data; and third, the informed application of the unsuitability criteria. This application would consider relative values, need, and importance of the potentially competing resources.

In contrast, as alluded to in the O.T.A. report at 108, B.L.M. has done its pre-lease "planning" in New Mexico without baseline data, deferring unsuitability decisions indefinitely. For example, with respect to archeological resources, it is universally recognized that the San Juan Basin is one of the best (if not the best) archeological regions in North America. See, e.g., Washington Office Study on the San Juan Basin, U.S.D.O.I., March, 1979; San Juan Basin Regional Uranium Study, U.S.D.O.I., Jan., 1981, at X-6; Final E.I.S., Star - Lake Bisti Regional Coal, Vol. I, U.S.D.O.I., Feb., 1979 at II-89. Unsuitability criteria #7 is "publicly owned places on Federal lands which are listed on the Nation Register of Historical Places." One

i Environmental Protection in the Federal Coal Leasing Program, O.T.A., May, 1984, at 123.

EXHIBIT A

CONSULTATION AND COORDINATION

Letter - B.L.M.
December 11, 1984
Page Two

would expect, therefore, that -- prior to leasing decisions and commercial quantities evaluations -- B.L.M. would inventory the lease areas for archeological sites, nominate those eligible for inclusion in the Register, await decisions on such nominations, and then apply the unsuitability criteria.

In contrast -- and in violation of N.H.P.A. and the continuing duty of E.O. 11593 -- B.L.M. has failed to inventory sites in the lease area. It has thus failed to include archeological sites in its pre-lease decision-making, and has thus also failed to act with any reasonable degree of caution with respect to the archeological treasures in the San Juan Basin. The failure of the B.L.M. to undertake proper precautions is underscored by the fact that many of the sites are central to Navajo religion. Thus, the failure of B.L.M. to inventory archeological sites for inclusion in the planning and decision-making process implicates a failure of B.L.M. to comply with A.I.R.F.A. (42 U.S.C. §1996). In addition, the hit-or-miss interview approach of B.L.M. with respect to religious sites was scientifically unacceptable, at best, and dishonest at worst.

The lack of organized and serious efforts to identify factors of importance to Native Americans in the San Juan Basin is felt not only in archeological, religious, and contemporary cultural issues, but also in criterion #3, cemeteries. The unsuitability criteria, as applied in Indian country, should reflect the burial practices of Native Americans, and accord their grave sites all the protection of dedicated cemeteries. This would be consistent with two opinions of the Portland Regional Solicitor.

The deferral of data gathering, data evaluation, and decision-making is also reflected in the B.L.M. failure to apply criterion #1: Trails. The Continental Divide National Scenic Trail has been authorized by Congress since 1978 (P.L. 95-625). Everybody knows where the Continental Divide proceeds through the San Juan Basin, and trail routes have been proposed for years. Nonetheless, no decision has been made on the Placement of the National Scenic Trail. The decision on the best route should occur prior to leasing decisions, not fall into place by default after coal companies start digging.

2 A 10% sample survey has apparently been done.

3 Indeed, my review of the Federal Register shows, even for those areas covered by sample surveys, that B.L.M. has failed to nominate any sites to the National Register of Historic Places, although numerous eligible sites were discovered.

Letter - B.L.M.
December 11, 1984
Page Three

The above comments apply to endangered species and their habitats (see criteria #9-15), as well. See O.T.A. report, at 107-108.

I wish also to point out that the unsuitability criteria may not lawfully be applied in a way to restrict the ability of Indian tribes or allottees to develop coal resources held in trust for them.

Thank you for this opportunity to comment.

Very truly yours,

Paul E. Frye, Attorney
Navajo Nation Department of Justice
P.O. Drawer 2010
Window Rock, Arizona 86515

PFF:daw

October 15, 1984

Director (650)
Bureau of Land Management
18th and C Streets, NW
Washington, D.C. 20240

RE: Scoping for Environmental Impact Statement on Federal Coal Leasing
Dear Madam or Sir:

On behalf of the Navajo Tribe of Indiana, I would like to urge your careful consideration of the following issues in the Supplement to the 1979 coal program EIS.

1. The scope of the supplement should include all presently proposed or contemplated coal leasing. This includes preference right lease applications now on file and competitive delineations. As the Department has recognized, significant new information and regulatory changes have occurred between 1979 and the present. Any further leasing of coal, especially in the San Juan Basin of New Mexico, without taking the Supplement to the EIS into account would violate NEPA.

2. The SEIS should focus on, among other things, the environmental effects of further coal leasing on the social and economic conditions of Indian tribes. The Navajo Tribe, currently suffering under Departmentally approved coal leases which provide for 15¢/ton royalty with no additional features, has about 2 billion tons of coal under lease in the San Juan Basin, but for which there is no known market. The SEIS should consider in detail the effect of further coal leasing in a depressed coal market on the ability of the Navajo Tribe and other Indian tribes to market mineral resources so that social and fiscal stability of Indian tribes and tribal governments can be achieved.

3. The SEIS should examine critically the need for any further coal leasing. In addition, alternatives to the use of coal should be explored in detail. The alternative analysis should take into consideration new information on the effects of coal use, as examined in part in *Atmosphere - Biosphere Interactions*, National Academy of Sciences, 1981; *Coal Use Below a Greenhouse Warming*, EPA, 1983; *Changing Climate*, National Academy of Sciences, 1983; *Global 2000 Report*, CSO and Dept of State, 1982; and the Congressional findings and concerns which may have prompted the decision to prepare the SEIS, including the April, 1983 Report of the Survey and Investigations Staff of the House Appropriations Committee.

EXHIBIT B

Letter to Director
RE: Federal Coal Leasing
October 15, 1984
Page Two

4. The SEIS should examine the advantages and disadvantages of the present approach of deferring cultural resources inventories, Indian religious site inventories, and Indian burial site/cemetery inventories until the mine plan approval stage, and should carefully consider requiring 100% on-the-ground inventories of such sites prior to leasing in areas such as the San Juan Basin where high site density is known to exist. In addition, the SEIS should consider, as mitigating as well as protective measures, requiring an organized ethnographic inquiry into sacred sites, rather than the hit-or-miss approach employed to date in the San Juan Basin.

5. Clearly, the timing of leasing deserves much inquiry. Staggering lease sales to reflect market realities would stabilize coal production and prices, with fewer incentives to attempt cost reductions through relaxation of reclamation efforts, and with more controlled boom/bust effects.

6. The almost complete lack of a tribal voice in, e.g., setting leasing targets, should be remedied. Thus, the SEIS should include consideration of the roles of tribes in assisting in planning, especially in the San Juan Basin, where 90% of the impacted population are Indians, according to the 1980 census.

7. The effects of Departmental policy to allow forced relocation of Navajo Indians from allotments supposedly held in trust by the United States for their sole use and benefit should be examined, especially in light of the disastrous consequences of forced relocations of Navajos from the former Joint Use Area. Such effects there have been documented as an eight-fold increase in mental health referrals, increased suicide rates, greater increase in alcoholism, and family instability. The mitigation of such anomalies should be analyzed, with emphasis on potential requirements of lease stipulations where Indian occupancy occurs. See also 43 C.F.R. §2091.5.

8. The impacts of coal leasing on both transportation networks and upon the ability of local governments to provide services should be examined. Again, emphasis should be given to tribal governmental units, who, in the San Juan Basin have received a disproportionately low percentage of state funds derived from federal coal leasing in the San Juan Basin.

Thank you for this opportunity to comment on the scope of the SEIS.

Very truly yours,

Paul E. Frye, Attorney
Department of Justice

PEF/gcm

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 19

- 19-1 The level of treatment of Native American issues is consistent with that of other issues in this supplemental EIS and is believed adequate for the purposes of this supplemental EIS and related decisions.
- The program-level impacts apply to all land ownerships--federal, state, Indian, private. Specific impacts to other ownership entities were not identified (see Chapter 4, Scope of the Analysis, page 122 of the draft supplemental EIS).
- 19-2 See response to Category 4, Data Adequacy, in the Categorical Analysis of Comments section of this chapter.
- 19-3 The decision to exempt preference right lease applications (PRLAs) in New Mexico from more environmental analysis was based on the fact that an EIS has already been prepared on these PRLAs. BLM believes that both the site-specific and cumulative analyses are adequate for the PRLA proposed actions in New Mexico.
- 19-4 BLM has determined that federal coal leasing will not serve to increase coal production or use, and therefore BLM does not see the program as directly influencing new system powerplant construction. For that reason, a decision was made not to address the end use of coal in this supplemental EIS.
- 19-5 The Department of the Interior believes that fundamental changes in surface owner consent provisions are more appropriately addressed by Congress. This position was set forth in the Review of Federal Coal Leasing, March 1984 (page 37). Nevertheless, issues surrounding split-estate leasing will be considered on a regional or site-specific basis as appropriate.

20

2004C 23rd Street
Los Alamos, New Mexico 87544
May 2, 1985

Mr. Jack D. Edwards, Project Leader
Bureau of Land Management, Division of
EIS Services
555 Zang Street, First Floor East
Denver, Colorado 80228

Dear Mr. Edwards,

The following comments on the DEIS Supplement to the Federal Coal Management Program are a slightly revised version of my comments at the March 20th hearing in Albuquerque.

My main comment relate to reclamation, since the enormous chamsa and spoil heaps left by past and present mining in the West will, if left to proliferate, will leave waste lands like those in over-exploited Africa. My comment is that whoever wrote the sections on reclamation did little or no homework. They are masterpieces of can-be, should-be, could-be and expected-to-be generalization. Coal mining has been going on for many years. There have been reclamation efforts. But there is no detailed case history of any one effort and its results. There is no mention in the EMRLA reports list on Page 347 of the following International mines: Pittsburgh-Midway in McKinley County, Utah International's Navajo Mine near Farmington, Public Service of New Mexico's San Juan Mine, and Sunbelt Mining's gateway and De-na-in mines. The Department of the Interior and the states involved are supposed to make annual inspections. What do the records say? This DEIS needs more than old studies on reclamation potential. It needs hard data on water usage when did the water stop (if it ever started) what the post-mining soil conditions were and how they were handled, how much vegetation is present and how much of that vegetation is regenerative. And how much did it cost? There is no free lunch. Esau and Jacob had that.

Concerning water, I cite the Note 4 to Table 6-1 on page 288 which reads "Degraded **ground** water quality would gradually return to pre-mining conditions, but the process would be slow, perhaps taking hundreds of thousands of years, depending upon the location." Does this mean we can do without coal now, but we can do without potable water for centuries?

Sincerely,

Lillian Tenopyr
Lillian Tenopyr

20-1

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RESPONSES TO COMMENT LETTER 20

See Appendix 5 for a discussion of studies of 22 western coal mines (Narten and others 1983). Site-specific resource inventories are a SMCEA requirement. (See the discussion on lease supervision in the Proposed Action section of Chapter 2.)

Footnote 4 in Table 6-1 has been corrected to read "hundreds of thousands of years." The user would not be without potable water because replacement water generally exists.

20-1

20-2

EXXON COAL USA, INC.
POST OFFICE BOX 2180 • HOUSTON, TEXAS 77001

W. CARTER GRIMSTAD, JR.
PRESIDENT

May 2, 1985

Federal Coal Management Program
Supplemental Environmental Impact
Statement

Mr. Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
555 Zang Street, First Floor East
Denver, Colorado 80228

Dear Mr. Edwards:

Exxon Coal USA, Inc., welcomes this opportunity to submit comments on the Supplemental Environmental Impact Statement (SEIS) for the Federal Coal Management Program issued on February 8, 1985.

Our review indicates that the Bureau of Land Management (BLM) has done a commendable job in its preparation of the SEIS. No major problems have been identified in the analysis presented in the SEIS. BLM's results appear reasonable, and it utilizes standard, well-recognized economic methodology in the production forecast for the SEIS. These production forecasts, of course, are key to the analysis of the environmental consequences of the proposed action and the alternatives outlined in the SEIS.

Exxon Coal supports the BLM's proposed action to continue the Federal Coal Management Program. The alternatives, other than the leasing by application alternative, in our opinion, are not in the best interest of the country. A predictable and stable federal coal leasing program is both in the public interest and in the interest of the coal industry. Exxon Coal agrees with the BLM's findings that a substantially smaller environmental impact will occur under the proposed action.

There are several areas of the SEIS, however, that raise areas for questions in our minds, and the following comments suggest clarification of information or amplification of discussions.

21-1 | In the Chapter 4 discussion of the socioeconomic "general impacts" at page 133 it is stated that adverse effects of

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Mr. Jack D. Edwards

-2-

May 2, 1985

21-1 | continued
increased coal production would include "(4) irreversible changes in local lifestyles." Although there will be changes in local lifestyles associated with the proposed action, it is not obvious that "changes in lifestyles" are all adverse or irreversible. It would be more appropriate to state that there will be concurrent changes in local lifestyles, some viewed as positive and some viewed as negative by the local populace.

• Table 4-3 (Total Coal-Related Employment) at page 141 seems to contain an error in that the construction employment projections for Wyoming for the "high" production level for 1995 and 2000 are significantly lower than the "medium" or "low" production levels. A similar problem appears under the Montana column for the year 1990. And, for the years 1995 and 2000 it is not clear why there is such a significant increase in construction employment for Montana.

• In addition to the statement made at page 161 in the transportation discussion of the Powder River Region about the Interstate Commerce Commission considering a spur proposed for the Tongue River railroad, it should also be noted that the Interstate Commerce Commission is currently evaluating a recent proposal by the Chicago and Northwestern Railroad to extend its track in Wyoming from the Coal Creek Junction north to Service Powder River Basin mines up to The Carter Mining Company's Caballo mine south of Gillette.

• The health and safety impact discussion of "harmful fumes and gases" at page 170 provides that "miners are often exposed to noxious or poisonous fumes from fires in machinery, conveyor belts, oils, and synthetic materials." This is an overstatement. Although there may be a risk of exposure to fire and noxious fumes, no responsible operator "often" exposes its miners to these conditions.

• In the "soils and vegetation" description at page 207, the statement is made that "overburden removal would also bring to the surface unfavorable plant growth and in some cases toxic materials." This statement ignores the fact that surface mining regulations do not allow placement of toxic materials in the upper four feet of reclaimed soil. 30 C.F.R. 816.102(f). While unfavorable plant growth and toxic materials may be brought to the surface, the surface miner is required to properly cover or treat these materials.

21-5

COMMENTS AND RESPONSES

RESPONSES TO COMMENT LETTER 21

- 21-1 This sentence has been revised.
- 21-2 The reason for the apparent anomaly in the employment projections for Wyoming is that the construction employment analysis is based on increases in production between that year and the next analysis year. For example, 1990 construction is based on 1990-1995 production increases. The 1995-2000 production increase was also used for the year 2000 construction analysis.
- Construction employment estimates are based on the projected change in a region's coal production. See Appendix 4, Socioeconomic methodologies, for more detail on the methods used to estimate construction employment.
- 21-3 The text in this final supplemental EIS has been revised to include this information.
- 21-4 The commenter is correct. No responsible mining operation exposes its miners to these conditions. The sentence has been changed to read "Miners are sometimes accidentally exposed..."
- 21-5 The introductory sentence (item 5) states that toxic soil materials substances would be buried. Also see the discussion of soil reconstruction. Surface mining regulations for the placement and treatment of toxic and unfavorable materials are acknowledged in the supplemental EIS, and are described in more detail in Appendix 5.

Mr. Jack D. Edwards

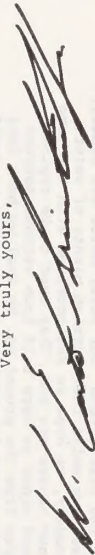
-3-

May 2, 1985

These comments represent the concerns we have identified to date. Exxon Coal also participated in the preparation of the comments being submitted by the National Coal Association and the American Mining Congress, and we recommend them for BLM's consideration.

Exxon Coal thanks the Department of the Interior for this opportunity to comment on the SEIS for the Federal Coal Management Program.

Very truly yours,



WCG:sma

CONSULTATION AND COORDINATION

22

May 3, 1985

Jack Edwards
Bureau of Land Management
Division of EIS Services
355 Zang Street, First Floor East
Denver, Colorado 80228

Dear Mr. Edwards,

We as a family, would like to put into writing our support. We strongly support and agree with the people that made speeches opposing the strip mines in the De-Na-Zin, Bisti area, during a recent meeting in Albuquerque, March 20, 1985, with Bureau of Land Management and other groups.

We have lived in the De-Na-Zin, Bisti area all our lives. Our Grandfathers, Grandmothers and many relatives have lived here before us. We are a family of ten. Three of our children were born in the De-Na-Zin area.

We raise sheep, goats, horses, and cattle as part of ours lives. Our elders have always encouraged us to continue living like they use to. They have taught us to live on this land and to appreciate what we have. We still worship the sacred grounds they left behind. These grounds have been blessed and will always be considered holy.

Every since we found out about the strip mines in this area, lots of questions have crossed our minds. Our primary concerns are our livestock, homes, and lands. Presently, our grazing lands have plenty of vegetation year around. Our water holes are usually holding water. We also have wells that furnish plenty of water. If we have to move someday, we hope we are provided with the same type of lands. Even our houses are old. They need to be replaced. Because of the proposed mines we were told from various sources not to build structures from the ground up. We feel we have lost many years just waiting around for someday to come when we would be able to build our houses, corrals, and other structures. We would like to settle down where we won't be told ever to move again. Hopefully where we live now.

We would like people from Washington, D.C., N.M. Division of Mineral Resources, the Navajo Tribe and other organizations that relate to these mine projects to come out and see what type of land we live on and find out exactly how we live. They can see for themselves what kind of problems we have and what are needs are.

As a family, we would like to express our appreciation to those that took the time to listen to the people that face the same problems we do. We hope and pray these problems will be resolved so we won't have to be confused, frustrated and worried about what's going to happen to our lands. We strongly urge you to take great consideration on our primary concerns. We are asking for your help.

Thank you,

John & Beesie Bunion
and Children

P.S. John Bunion is one of the speakers during the EIS hearing.

CONSULTATION AND COORDINATION

Mr. Jack D. Edwards
May 7, 1985
Page Two

Salt River Project supports the Management Objective, on page 11, "to have in place a flexible mechanism that can analyze the need for leasing at a given time and place and can respond no matter how small or great that need is." If this objective is to be met, work must continue on the Management Framework Plan for the San Augustine Coal Resource Area which would facilitate a second round lease sale in the San Juan River Region. The Draft San Augustine Coal Area Management Framework Plan Amendment/Environmental Assessment prepared by the BLM addressing coal mining as an amendment to the existing plan was circulated in July, 1984 and was to the hearing stage before being halted in October, 1984. Public meetings were scheduled in October, 1984 then abandoned because of the federal moratorium on coal leasing. This effort should be continued by BLM in order to "promote economically efficient and environmentally sound patterns of multiple resource use in western states," in addition to the processing of PRLA's in the San Juan River region. The location and volume of PRLA coal does not necessarily give it tremendous advantages over other Federal coal deposits located closer to the eventual market in the San Juan River Region such as those deposits located in the San Augustine Coal Resource Area.

In summary, Salt River Project appreciates the opportunity to comment on the Draft Environmental Impact Statement Supplement. We believe the law is clear in providing public body set aside, and we believe in responsible continuance of the Management Framework Plan for the San Augustine Coal Resource Area, and in allowing coal reserves to be made available through the Federal coal leasing process which would be the most efficient and have the least impact on the environment.

Sincerely,

Darrell E. Smith

Darrell E. Smith, Director
Resource Planning

DES/RTT:sds

24 Salt River Project WATER & POWER

BOX 1980 PHOENIX, ARIZONA 85001

TELEPHONE 275-5000

May 7, 1985

Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
555 Sang St., First Floor East
Denver, CO 80228

Dear Sirs:

RE: FEDERAL COAL MANAGEMENT PROGRAM DRAFT ENVIRONMENTAL
IMPACT STATEMENT SUPPLEMENT DATED FEBRUARY, 1985

Salt River Project Agricultural Improvement and Power District (Salt River Project) is a political subdivision of the State of Arizona, which provides electric service in a 2,900 square mile service territory in parts of Maricopa, Gila and Pinal Counties in Arizona and also provides electric service to mining customers and wholesale power in an additional area of 2,400 square miles in Pinal and Gila Counties. Total customers number more than 360,000. Salt River Project has an ownership interest in six existing coal-fired generating stations and operates two of those stations for itself and the other participants. Salt River Project has actively participated in and is familiar with the San Juan River Region coal leasing process.

Salt River Project would like to compliment you and your staff on this comprehensive and complete Draft Environmental Impact Statement Supplement. However, Salt River Project is concerned with the implication that PRLAs are the "driving force" for coal production in the San Juan River Region. For example, in Appendix 6 "Proposed Coal Program Changes" on page 395, the last paragraph regarding the San Juan River Region states:

Essentially, the disposition on the PRLAs will determine the need for additional leasing in the San Juan region. The location and volume of PRLA coal gives it tremendous advantages over other Federal coal deposits in the region.

As stated on page 41 in the second paragraph describing the Mineral Leasing Act (MLA) of 1920 and Federal Coal Leasing Amendments Act (FCLAA) of 1976, "Finally, public bodies were entitled to have set aside a reasonable number of leasing tracts for their own production and use." Salt River Project is a "public body" within the meaning of that term as it is used in Section 2(a) of Public Law 94-377 (5.391). No PRLA's are held by public bodies in the San Juan region and therefore focusing on PRLA's as the determining factor for additional leasing violates one of the premises of MLA and FCLAA. In addition, by concentrating on PRLA coal as the determining factor in coal leasing, nothing has been done to cure the alleged "speculation in coal leasing" which was one of the original reasons for the coal leasing moratorium and the revised coal leasing program now in place. It must be noted that there has been no lease sale in the San Juan region to allow new ownership of coal resources.

24-1

COMMENTS AND RESPONSES

RESPONSES TO COMMENT LETTER 24

24-1

BLM appreciates these concerns. Although BLM believes that the general statement quoted from the "Proposed Program Changes" is a correct summary of the situation in the San Juan River Region, leasing to meet the demonstrated needs of public bodies could still be carried out under either the Proposed Action or Leasing by Application. The PRLAs must be processed as a matter of law, and BLM cannot ignore the impact of this coal on the San Juan River Region.

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UTAH INTERNATIONAL INC.

550 CALIFORNIA STREET • SAN FRANCISCO, CALIFORNIA 94104
CABLE ADDRESS: UTAHINTL • (415) 941-1518

7 May 1985

Division of Environmental Impact Statement Service

Bureau of Land Management
555 Zang St., First Floor East
Denver, CO 80228
Attn: Jack Edwards

38120
DOI-BLM
Coal Leasing

Dear Sirs:

We noted in our review of the Draft EIS Supplement for the federal coal management program that the citations in the EIS concerning reclamation success at mining operations are dated. For various reasons much of the recent data on reclamation success has not yet been widely publicized. Attached is a discussion of revegetation data recently submitted to the New Mexico Mining and Minerals Division and to the Office of Surface Mining by the San Juan Coal Company, a wholly owned subsidiary of Utah International Inc.

The enclosed material makes several important points for the San Juan Mine (where annual precipitation is less than 8 inches per year):

1. Determination of revegetation success is a very complicated process requiring the collection of extensive data over time and detailed statistical analysis.
2. Production and cover values of revegetated areas are generally higher than undisturbed areas.
3. Grazing capacity of revegetated areas is generally higher than on undisturbed areas due to selective seeding of palatable species.

Although we are, pleased with our revegetation accomplishments, we continue to refine our reclamation techniques to ensure long-term reclamation success. Thank you for this opportunity to comment. Please contact us if we can provide any additional information.

Sincerely,



Roger E. Nelson
Manager, Corporate Environmental Quality

REN:prn
attachment

cc: Tom Walker

VEGETATION

San Juan Coal Company (SJCC) sampled vegetation on both undisturbed and revegetation areas in July and August of 1984 as part of its ongoing monitoring program. Undisturbed areas (historic record) were sampled to obtain additional baseline data to be used in the development of the revegetation success standards. Vegetation data was collected on the revegetation plots to assess the status of SJCC's reclamation program. The following paragraphs discuss the sampling and analytical methodology and provide a brief summary of the data. For a more detailed examination of the data, please refer to the attached computer-generated tables.

Methodology

SJCC collected the data necessary to compile the following information in 1984:

1. Vegetation cover, frequency, constancy and total annual production for each species in the herbaceous stratum for each vegetation type.
2. Vegetation cover, frequency, constancy, density and total annual production for each species in the shrub stratum for each vegetation type in which the shrub stratum is present.

Vegetation cover by species for grasses, forbs and shrubs was determined by taking continuous readings recording intercepted length of live vegetation along a 30 meter transect. The intercepted length of each plant was recorded to the nearest 1 mm and each transect counted as one sample. Frequencies were obtained by species for grasses, forbs and shrubs by dividing the 30 meter transect into ten subplots each 3 meters in length. The number of subplots in which a given species was present was recorded as the frequency percentage. Constancy was calculated for each species by dividing the number of transects in which a species was recorded by the total number of transects within each vegetation type. Constancy values were recorded as a percentage.

Production for grasses, forbs and shrubs was harvested by species from within a 10 CM x 10 M quadrat (1M²) placed along the 30 meter transect. All plant biomass within the vertical projection of the quadrat was clipped regardless of rooting location. The clipped biomass was then oven-dried at 60°C to a constant weight. These oven-dried weights by species were used to compute the Animal Unit Months/acre values for cattle and sheep.

All field data was entered into the computer for analyses using the SAS statistical package. This produced means for cover, production and shrub density and percentage values for constancy and frequency by species. Sample adequacy calculations were performed on both cover and production data to ensure an acceptable level of sampling intensity. Either the specified level of sampling (from the sample adequacy calculations) was achieved on all areas or forty samples were taken. A more detailed explanation of the sampling and analytical procedures used in the vegetation program is presented in the San Juan Mine permit application.

CONSULTATION AND COORDINATION

Results

A summary of the data collected on the undisturbed vegetation types is presented in Table I. Percent cover on the three vegetation types ranged from 1.1% on the galleta-fourwing saltbush community to 2.1% on the shadscale-alkali sacton type. Production varied from a high of 242 pounds per acre on the galleta-fourwing saltbush type to a low of 99 pounds per acre on the shadscale-alkali sacton community. The galleta-fourwing saltbush community had a top shrub density value of 9610 per acre, while the shadscale-galleta type had the low value with 3971 shrubs per acre. Carrying-capacity for cattle was highest on the shadscale-galleta vegetation type (0.07 AUM per acre) and lowest on the galleta-fourwing saltbush community (0.04 AUM per acre).

Table II presents a summary of the data for the revegetation plots sampled in 1984. Percent cover was highest on the 1980 plot (5.2%) and lowest on the 1980 Sage IV plot (2.6%). Production values ranged from a low of 218 pounds per acre on the 1980 Sage IV plot to a high of 426 pounds per acre on the 1983 plot. Shrub density values ranged from 4646 per acre on the 1983 plot to 128 shrubs per acre on the 1978 plot. Carrying-capacity values for cattle ranged from a low of 0.12 AUM per acre on the 1980 Sage IV plot to a high of 0.19 AUM per acre on the 1983 plot.

In summary, the revegetation areas have generally higher vegetative cover and production than undisturbed areas. Also because the species in the reclaimed areas are more palatable, grazing capacity is generally higher on reclaimed areas than on undisturbed areas. The reclaimed areas therefore, provide equivalent or enhanced erosion control (i.e. vegetative cover) and superior utility (i.e. vegetative production) for the final land use.

RDW219

TABLE 1A

SN, JUM
VEGETATION DATA REPORTING
1984

MAY 7, 1985

SUMMARY OF STATISTICAL TOTALS — HISTORIC RECORD

	COVER	PRODUCTION	SHRUB DENSITY
GALETTA/ALBUCA	1.12 (36.92)	1.94 (63.98)	9610.1
SHADSACLE/GALLETTA	1.99 (56.68)	1.33 (42.23)	3970.5
SHADSACLE/SACTON	1.16 (36.22)	2.08 (62.78)	5440.1

SN, JUM
VEGETATION DATA REPORTING
1984

MAY 7, 1985

VEGETATION DATA REPORTING

	COVER	PRODUCTION	SHRUB DENSITY
GALETTA/ALBUCA	1.12 (36.92)	1.94 (63.98)	9610.1
SHADSACLE/GALLETTA	1.99 (56.68)	1.33 (42.23)	3970.5
SHADSACLE/SACTON	1.16 (36.22)	2.08 (62.78)	5440.1

TABLE 1B

SN, JUM
VEGETATION DATA REPORTING
1984

MAY 7, 1985

VEGETATION DATA REPORTING

	COVER	PRODUCTION	SHRUB DENSITY
GALETTA/ALBUCA	1.12 (36.92)	1.94 (63.98)	9610.1
SHADSACLE/GALLETTA	1.99 (56.68)	1.33 (42.23)	3970.5
SHADSACLE/SACTON	1.16 (36.22)	2.08 (62.78)	5440.1

TABLE 1C

SN, JUM
VEGETATION DATA REPORTING
1984

MAY 7, 1985

VEGETATION DATA REPORTING

	COVER	PRODUCTION	SHRUB DENSITY
GALETTA/ALBUCA	1.12 (36.92)	1.94 (63.98)	9610.1
SHADSACLE/GALLETTA	1.99 (56.68)	1.33 (42.23)	3970.5
SHADSACLE/SACTON	1.16 (36.22)	2.08 (62.78)	5440.1

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 25

25-1 The revegetation study and monitoring data (July and August 1984) for the San Juan Coal Company was not specifically incorporated in the supplemental EIS because data for all studies cannot be specifically recognized. But the results of the San Juan Coal Company study and similar studies and research programs conducted by leading authorities and mining companies were summarized and included in Appendix 5 of the supplemental EIS, Reclamation and Erosion Control on Surface-Mined Lands.

The following comments on the draft supplemental EIS were submitted by Utah International Inc. in a letter that commented mainly on A Review of the Unsuitability Criteria in Federal Coal Leasing and appears in Appendix 1 as Unsuitable Review Comment Letter 7. This section thus presents only the comments and responses but does not reprint the comment letter.

LETTER COMMENT 25-2: Page 188, Fourth paragraph. The DEIS states that smoke from the burning of cleared vegetation would be a major emission of air pollutants. Because the burning of brush is not a standard procedure except where the native vegetation is trees and heavy brush, it should be noted that this will be a major emission only in localized areas for very short periods of time.

RESPONSE: The text has been changed as suggested.

LETTER COMMENT 25-3: Page 190, First paragraph. It should be noted that the Environmental Protection Agency is developing proposed standards for particulates less than 10 microns in diameter.

RESPONSE: The text has been corrected as suggested.

LETTER COMMENT 25-4: Page 207, Fifth paragraph. The statement that "overburden removal would also bring to the surface unfavorable plant growth and in some cases toxic materials" (sic) ignores the fact that surface mining regulations require that toxic-forming materials shall be adequately covered with non-toxic material or treated to control the impact on surface and groundwater and to minimize adverse effects on plant growth [30 CFR Part 816.102 (f)]. While unfavorable plant growth and toxic materials may in fact be brought to the surface, the surface miner is required to cover or treat these materials.

RESPONSE: The introductory sentence (item 5) states that toxic substances would be buried. Also see the discussion of soil reconstruction. Surface mining regulations for the placement and treatment of toxic and unfavorable materials are acknowledged in the supplemental EIS.

LETTER COMMENT 25-5: Page 208, First sentence. The statement that "some small localized areas would require continued follow-up to ensure adequate erosion control and revegetation" is misleading. Earlier on page 207 in the third paragraph it is suggested that monitoring and maintenance programs are needed to ensure timely and effective reclamation. Is the statement on page 208 merely a restatement? Or is it suggested that "follow-up" will be required on a continuous basis? If the latter is the case, it should be pointed out that this would constitute revegetation failure. In such cases, the permittee or regulatory authority would be forced to reclaim the area again so as to remedy the situation.

PAGE 1
TABLE IIA

SUMMARY OF STATISTICAL TOTALS - REVEGETATION DATA	SAN JUAN VEGETATION DATA REPORTING 1984		SAN JUAN PRODUCTION IN MARCH 5 (2 TOTAL PROD.) - SHEEP (UNIT/ACRE)	
	HERBACEOUS	SHRUB	UNIT/ACRE	TOTAL
1978 PLOT	4.74 (94.86)	0.21 (4.14)	12.00 (5.36)	294.49
1979 PLOT	3.62 (94.72)	0.20 (5.00)	11.45 (4.01)	205.83
1980 PLOT	4.36 (84.05)	0.83 (15.93)	65.04 (20.35)	319.45
1981 PLOT	3.59 (72.41)	1.30 (26.39)	73.22 (22.69)	309.09
1982 PLOT	2.60 (81.56)	0.58 (18.44)	42.69 (14.12)	264.12
1983 PLOT	5.29 (85.90)	0.88 (14.10)	76.08 (18.32)	424.19
1984 PLOT	1.56 (60.71)	1.01 (39.29)	72.67 (31.28)	218.39
TOTALS:				1370.9

PAGE 1
TABLE IIB

SUMMARY OF STATISTICAL TOTALS - REVEGETATION DATA	SAN JUAN VEGETATION DATA REPORTING 1984		SAN JUAN PRODUCTION IN MARCH 5 (2 TOTAL PROD.) - SHEEP (UNIT/ACRE)	
	HERBACEOUS	SHRUB	UNIT/ACRE	TOTAL
1978 PLOT	4.74 (94.86)	0.21 (4.14)	12.00 (5.36)	294.49
1979 PLOT	3.62 (94.72)	0.20 (5.00)	11.45 (4.01)	205.83
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1983 PLOT	5.29 (85.90)	0.88 (14.10)	76.08 (18.32)	424.19
1984 PLOT	1.56 (60.71)	1.01 (39.29)	72.67 (31.28)	218.39
TOTALS:				1370.9

PAGE 1
TABLE IIC

SUMMARY OF STATISTICAL TOTALS - REVEGETATION DATA	SAN JUAN VEGETATION DATA REPORTING 1984		SAN JUAN PRODUCTION IN MARCH 5 (2 TOTAL PROD.) - SHEEP (UNIT/ACRE)	
	HERBACEOUS	SHRUB	UNIT/ACRE	TOTAL
1978 PLOT	4.74 (94.86)	0.21 (4.14)	12.00 (5.36)	294.49
1979 PLOT	3.62 (94.72)	0.20 (5.00)	11.45 (4.01)	205.83
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1984 PLOT	1.56 (60.71)	1.01 (39.29)	72.67 (31.28)	218.39
TOTALS:				1370.9

COMMENTS AND RESPONSES

RESPONSE: See response to comment 44-10.

LETTER COMMENT 25-6: Page 212, first sentence. The statement should read "Much of the good cropland in the west, including prime farmland, usually occurs on alluvial valley floors." The previous statement was false.

RESPONSE: The statement has been clarified in the final supplemental EIS.

LETTER COMMENT 25-7: Page 260, first paragraph. The author's assumption that replacement waters will generally come from wells tapping deeper aquifers is not supported by practical experience. Several replacement options exist and have been historically used by mine operators depending on local circumstances. Similarly, the costs of operating and maintaining these replacement sources is quite variable. The author's statement leaves the impression that these costs will always be higher, thereby placing an unfair burden on the local water user. This section should be changed to read:

"Replacement supply options include drilling of deeper wells, relocating wells to adjacent undisturbed areas or building surface impoundments for runoff retention. Depending on the option chosen and local site conditions, the expense to the water user of operating these replacement supplies may be higher or equal to their current operating costs."

RESPONSE: The text has been rewritten to include this suggestion.

LETTER COMMENT 25-8: Page 329, Air quality methodology. Old emissions factors are used rather than EPA approved factors published in AP-42 (compilation of Air Pollution Emission Factors), Supplement 14, pg. 8.24-1, published May 1983. The accepted methodology for calculating air quality impacts should be used in the EIS.

RESPONSE: The factors used are from BLM's Air Quality Handbook for Surface Mines (Morrison-Kaudson Company Inc. 1983) and represent the best normalized emission factors in the absence of a detailed mine design.

LETTER COMMENT 25-9: Page 330, fourth paragraph, first sentence. Because computing local emissions from a mine based on mine productions is a very crude methodology, this sentence would be more accurate if it read: "Because the emissions are normalized on the basis of mining 1 million tons of coal per year, regional emissions can be estimated simply by multiplying by a predicted coal production rate factor."

RESPONSE: The text has been clarified to state that the emission figures are regional estimates.

LETTER COMMENT 25-10: Page 343, fourth paragraph. The statement suggests that revegetation failure has occurred "at many sites" because of clayey materials. While research has shown that there is a general correlation between clayey macerella and revegetation success, there are a number of off-setting revegetation techniques such as supplemental irrigation, mulching, and surface manipulation. Contrary to the implication of this paragraph, revegetation failure has been documented to be the result of clayey materials at very few sites.

RESPONSE: This statement implies that clayey materials generally present the greatest problems in western reclamation and would require more intensive use of revegetation and erosion control measures than would other materials to ensure successful reclamation. The text has been revised to clarify this statement.

LETTER COMMENT 25-11: Page 344, first paragraph. This paragraph suggests that, because of unique sets of soil forming processes, the original soils would be required for long-term successful restoration. This suggestion ignores the fact that following surface mining the unique combinations of contour, microclimate, slope, position, soil texture, parent material, etc., have all been altered. It is therefore logical that the unique set of factors contributing to reclamation success will have been altered also. Furthermore, this paragraph ignores the ecological observation that, commonly following major disturbance, 6-8% sedimentation, deep plowing, etc., land productivity increases. We suggest that, because the observations made in this paragraph are false and misleading, the paragraph be eliminated.

RESPONSE: See response to comment 44-16.

LETTER COMMENT 25-12: Page 352, second paragraph. Neither Congress nor most state legislature have made it "the goal of the regulatory authorities... to establish native plant communities to the greatest degree possible." A more accurate assessment of the mandate given most regulatory authorities would be to ensure that the land affected by mining is restored to a condition capable of supporting the uses which it was capable prior to mining and to establish a diverse, effective, and permanent vegetative cover of the same seasonal variety, native to the area and capable of self-regeneration and plant succession.

RESPONSE: The mandate to ensure that lands disturbed by mining are reclaimed to a favorable condition to support premining uses becomes a goal for both the regulatory authority and the applicant.

LETTER COMMENT 25-13: Page 354, first paragraph. The second sentence should be revised to read:

"Irrigation was observed as an operating procedure only at the Mavejo and San Juan mines in New Mexico where water for irrigation is readily available."

Although water is also used for powerplant cooling, the same water is not necessarily used for both cooling and irrigation.

RESPONSE: This sentence has been revised to reflect this comment.

LETTER COMMENT 25-14: The last sentence in that paragraph is misleading. Vegetation dieback following removal of irrigation is both expected and planned for. The author's suggestion that this is "significant" implies revegetation failure. Failure of revegetation following removal of irrigation has not been proven.

RESPONSE: See response to comment 44-19.

ENVIRONMENTAL DEFENSE FUND

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May 6, 1985

Jack D. Edwards, Project Leader
Bureau of Land Management, Division of EIS Services
555 Zang Street, First Floor East
Denver, CO 80228

Dear Mr. Edwards:

Enclosed are the comments of the Environmental Defense Fund (EDF) on the Draft Environmental Impact Statement Supplement (DEISS) for the Federal Coal Management Program, prepared by the Department of the Interior (DOI) and issued in February 1985. The DEISS deals with the potential consequences of continuing to lease Federal coal under either the current program or three alternatives to it. EDF has previously submitted both written and oral comments to DOI on the DEISS (at a public hearing in Albuquerque, New Mexico, on March 20, 1985). This letter and these comments below are intended to supplement those already made, and should be considered in concert with them.

EDF urges the BLM to amend the Final EIS to reflect as the preferred action the No New Federal Leasing Alternative described in the DEISS. Paul Biderman, Secretary of Energy and Minerals for the State of New Mexico, has testified that the DEISS "provides a strong hypothetical case for terminating the leasing program entirely" (Paul Biderman, prepared testimony, DEISS hearing, Albuquerque, New Mexico, March 20, 1985). As these comments show (see section I), the DEISS demonstrates no need to lease Federal coal at this time, in fact as well as in hypothetical terms.

Although previous EISs have asserted a need for leasing, in order to increase coal production, this one clearly states that there will be basically no effect on the level of Western coal production from leasing (DEISS, pp. 4, 11, 59, 60, 110, 273). In eight of the nine cases considered in the DEISS, DOI's own analysis shows that increased leasing actually will lead to either the same or lower coal production than would have occurred without the additional leasing.

In the Production Forecast Technical Report, in three of the six scenarios examined, coal production in the West is lower with leasing than without. The only case in which new leasing is shown to have any significant effect on net coal production is in the high demand case, for the year

Jack D. Edwards, Project Leader
May 6, 1985
Page 2

2000—and even then, most of the effect is to transfer production from the east and midwest (including Texas and Oklahoma) to the west. National coal production is increased (even in this unlikely case) less than 1 Percent (Production Forecast Technical Report, Table I-1).

Nevertheless, the DEISS recommends a program of new coal leasing as the preferred alternative. The enclosed comments explain why none of the reasons offered for doing so, either explicitly or implicitly, is sound (see section III of our comments).

Additional defects in the DEISS are also indicated (see section II). The accuracy of the forecasts of coal demand and production is subject to considerable question, especially the high demand forecast (see section IV). Certain specific statements are demonstrably in error; and others are inconsistent with other analyses (see section V).

Despite these defects, EDF commends DOI for preparing a supplement to the 1979 coal management program FES. The inclusion of an entire chapter on supply and demand is a highly commendable break from the approach taken in regional coal leasing EISs over the last several years. EDF looks forward to receiving and commenting on a revised version of this EISS.

Sincerely yours,

David Marcus
Economic Analyst

ENVIRONMENTAL DEFENSE FUND

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COMMENTS ON THE FEDERAL COAL MANAGEMENT PROGRAM DRAFT ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENT

by the Environmental Defense Fund

2606 Dwight Way
Berkeley, California 94704

Submitted by: David Marcus

May 6, 1985

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COMMENTS AND RESPONSES

COMMENTS ON THE FEDERAL COAL MANAGEMENT PROGRAM DRAFT ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENT

I. The DEISS represents a radical departure from other recent coal EISs

The DEISS differs radically in its treatment of coal supply and demand from the BLM's coal EISs done over the last several years for the San Juan Basin. On a number of issues, it adopts positions previously advocated by third parties (including EDF), but heretofore rejected by the BLM.

A. The DEISS acknowledges that coal production is constrained by lack of demand, and will continue to be so. This is a major shift. It contradicts the previous BLM position in New Mexico that there was a "need" to lease coal to prevent supply shortfalls.

B. The DEISS acknowledges (and the supporting Production Forecast Technical Report (PFR) confirms even more strongly) that issuing PRLAs and new coal leases could actually reduce coal production in the San Juan Basin. It contradicts the previous BLM position that the more coal leased, the more coal production will occur (San Juan River Region Coal DEISs and FEIS, Figure 1-1).

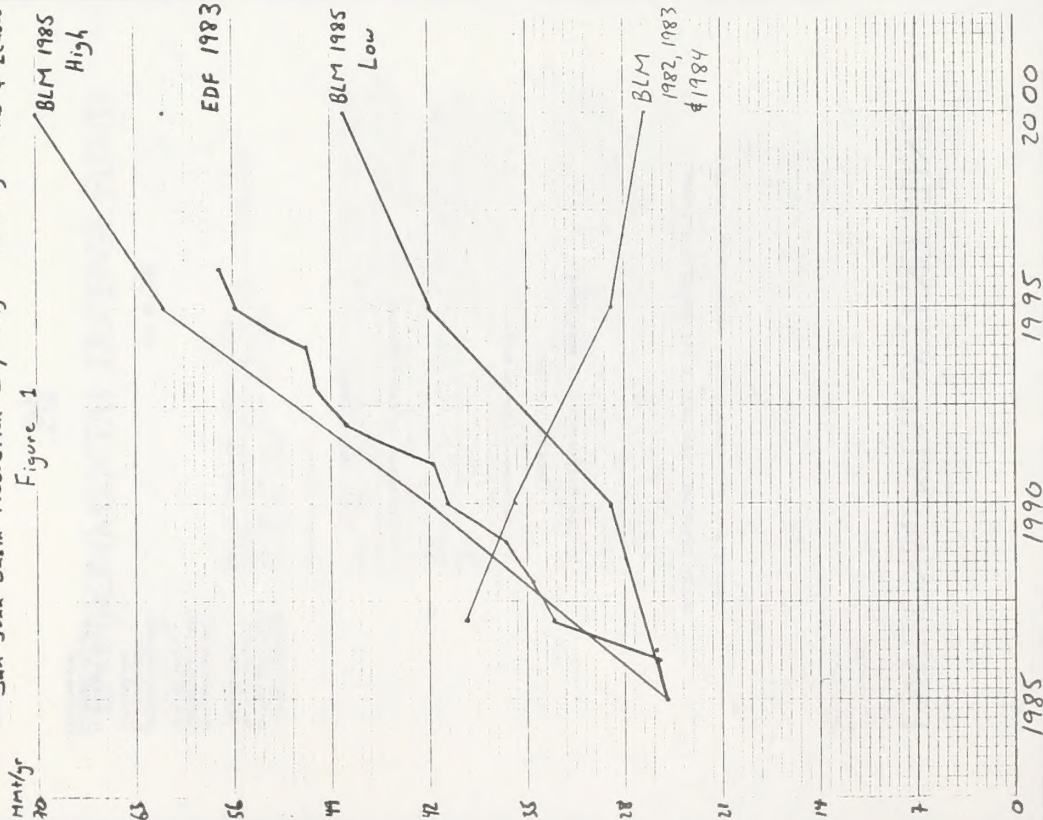
C. The DEISS states that there is sufficient coal at existing mines and leases in all five coal regions to meet demand through the turn of the century (PFR, Tables IV-1 and V-1). The coal production capability estimates in the DEISS for the San Juan River Region are radically different from those in the 1982, 1983, and 1984 San Juan River Region Coal EISs (but consistent with the mine-by-mine estimate submitted by EDF in 1983). See Figure 1 on the next page.

D. For the West as a whole, the DEISS projects either no change in production (if overall demand is low), or miniscule swings in production of under 2 percent in both directions (if overall demand is at the medium level) (p. 90). Only in the high demand case does leasing significantly increase production, and then only in the year 2000. The high demand case assumes strong economic growth (p. 93) and the cancellation of all nuclear power plants less than 80 percent complete (p. 92), and is considerably higher than current forecasts from major private forecasters and the Department of Energy which the DEISS itself reports. Even then, no increase occurs until the year 2000, and a good part of the projected increase in coal production is attributable to an extremely conservative evaluation of existing production capacity (where production capacity of existing mines and leases falls in a range, the lowest point on the range was used in the modelling).

CONSULTATION AND COORDINATION

San Juan Basin Production Capacity - Existing Mines & Leases

Figure 1



E. In the PRTR, the proposed continuation of leasing actually causes western coal production to drop in 1995, below the no-lease level, at both demand levels analyzed.

F. The DEISS analysis thus demonstrates that leasing will not significantly increase production, jobs, or tax revenue (Tables 5-1, 4-3, and 4-5) prior to the year 2000—and then only under high-demand assumptions. In other words, there are no demonstrable public benefits. Under these circumstances, as analyzed in the DEISS, the only economic achievement of a leasing program would be to turn federal resources over to private owners.

II. Under NEPA standards, the DEISS unfortunately remains inadequate

A. The DEISS generally contains no summary tables of the different impacts of different alternatives for the West as a whole. The comparative analysis chapter (Chapter 5, pp. 273-83) contains the closest thing to a summary table (Table 5-1). Table 5-1 does not contain totals, just data for the individual regions, and it omits data for certain key variables (such as number of direct mining jobs, or even total jobs).

Thus, the casual reader may not realize that in 8 of the 9 cases considered, leasing not only has virtually no effect on production (as shown on p. 90), but it also has virtually no effect on employment, population, severance taxes, or any other variable analyzed. This is, of course, a key conclusion.

B. The DEISS contains no analysis as to which tracts (existing leases, PRLAs, or new leases) would actually enter production. There is thus no evidence one way or the other as to whether leasing would promote development of efficient leases, or of environmentally preferable ones, or of ones near existing infrastructure. This analysis is essential in order to determine environmental impact, as well as economic impact.

C. In the DEISS, there is no acknowledgement that there are national parks near some proposed leases but not others, nor of the fact that some proposed leases lie athwart wilderness study areas. Impacts such as land disturbance, TSP emissions, mining accidents, and so on are all assumed to be directly proportional to overall production. Royalties are treated the same for all leases, although they actually differ depending on whether the coal in question is federal, state, or private. Again this information is essential in order to determine the impact of the proposed action. For example, the proposed action might result in the development of Federal coal near Chaco Canyon National Park while no action might result in the development of state coal near Fence Lake with greater financial benefit to the State of New Mexico. (Both of these are sites where a large Arizona utility is interested in developing coal resources.)

26-8 III. The reasons given in the DEISS do not justify the proposed leasing program

In this DEISS, the BLM effectively concedes that "need for coal" is no longer a valid ground for leasing (see A, below). It offers five new reasons instead to justify a leasing program. However, none of them is substantiated in this document (see B through F, below). Job creation, frequently cited by others (but not by the DEISS) as a ground for leasing, also fails to justify continued leasing in this case, according to the evidence in the DEISS (see G, below).

A. The 1979 coal FES justified leasing by stating a "need" for Federal coal, and was duly cited by regional EISs. This DEISS states (p. 11) that "enough federal coal has been offered at competitive lease sales since 1979 (so that the privately held coal) inventory can now provide a variety of coal deposits for potential development as the need arises." Indeed, as Table 1 below shows, the DEISS data indicate that existing mines and leases will provide an excess of potential supply over actual demand during the next fifteen years greater than that which exists in the west today at a time of generally perceived oversupply.

Table 1

Demand and Production Capacity, 5 Western Federal Coal Regions without new Federal leasing of any kind

Year	Demand (MM tons)	Potential Supply (MM tons)	Excess of Supply over Demand (percent)
1985	236(a)	262(b)-358(c)	11-52
1990	277(d)-316(e)	445-458(f)	41-65
1995	307(d)-420(e)	503-554(f)	32-80
2000	361(d)-508(e)	545-616(f)	7-71

(a) DEISS, Table 3-8, col. 1
(b) DEISS, Table 3-6, col. 1
(c) DEISS, Table 3-6, col. 2
(d) DEISS, Table 3-7, low demand case, no new leasing
(e) DEISS, Table 3-7, high demand case, no new leasing
(f) DEISS, Table 3-4

26-9 B. DOI states that it needs a "mechanism that can analyze the need for leasing at a given time and place and can respond no matter how small or great that need is." (p. 11). However, there is nothing in the description of the proposed action that indicates the conditions, if any, under which DOI would ever decide not to lease. The "mechanism" therefore gives the appearance of being a one-way decision mechanism.

26-5 D. There is nothing in the DEISS about quantities of coal to be leased, as distinct from annual production rates. This omission is critical, because the inclusion of such data would presumably show that proposed leasing levels are disproportionate to the expected increase in production. The DEISS assumes enforcement of the due diligence requirements in current law against existing leases, thus reducing their potential production capacity (p. 94). At the same time, it appears to ignore the fact that a policy which would lease billions of tons of PRLA coal, without any consequent increase in production, would itself represent a violation of due diligence principles.

26-6 E. In present form, the DEISS avoids any clear statement as to whether the proposed action is merely a program to study coal leasing, or a program actually to lease coal. If it is the latter, the DEISS should say how much coal may be leased, and where and when. On the other hand, if this is merely an EIS on the idea of a coal leasing program, then site-specific EISs on proposed lease sales will also be necessary. The DEISS admits as much (p. 121). Since the data in this DEISS contradict previous documents such as the San Juan River Regional EIS, for example, (as explained in previous EDF testimony), those regional coal EISs cannot serve as the necessary site-specific EISs for this program. Documents such as the San Juan River Region Coal FES would have to be redone, using the much lower demand and much higher existing supply data in the DEISS, before they could be considered valid.

26-7 F. For the one case in which no-action is substantially different from leasing (high demand, in the year 2000), the DEISS has only one text page of discussion of impacts on Midwest and Appalachian coal producers (pp. 282-3). The basic thesis of the DEISS is that increased leasing will allow lower-cost coal production in the West to displace higher cost coal production (p. 59), although any such effects are either small or intra-regional in all cases except the high demand case for the year 2000 (p. 90). This would imply that if coal leasing has any effect on production at all, that effect will be to put non-Rocky Mountain miners out of work (primarily in Texas and Illinois—see DEISS p. 283), and to do so with lower-cost mines. That, in turn, suggests, that every new job created in the west by this program would cost more than one job in the east. The DEISS has no quantitative analysis of any effects due to leasing outside the Rocky Mountain region, except for total production figures.

CONSULTATION AND COORDINATION

C. DOI states that it needs to issue PRLAs and lease more coal in order "to promote economically efficient and environmentally sound patterns of multiple resource use in western states." (p. 12). However, DOI's own data show that leasing will not, in all likelihood, increase production. This means that new leases either will not be developed once leased, or that new leases will displace some existing mine or lease. There is no evidence that this is either economically efficient or environmentally sound, and no basis for assuming so (indeed, the normal assumption would be otherwise). In the San Juan River coal region, for example, such a leasing policy might threaten simultaneous boom and bust, if new mines open in the previously undeveloped lands lying on and near the Ah-Shi-Sle-Pah and De-Na-Zin wilderness study areas, while existing mines around the perimeter of the San Juan Basin (such as the McKinley or McIntire mines near Gallup, where an infrastructure already exists) shut down.

26-9a

DOI offers the argument that increased and continuing coal leasing will improve environmental quality by increasing the pool of potential mines and allowing production which would have occurred at environmentally delicate sites to instead occur at less sensitive locations (p. 58). For such a leasing-caused improvement to be possible, there would have to be some kind of agency which could look at all the potential coal mines in the country; determine that only, say, 80% of them were needed to meet demand; figure out which 80 percent were the least environmentally damaging; and then forbid the owners of the other 20% to operate. In reality, of course, no such analyst or director exists. Actual coal development is a decision made by individual coal companies; and since coal demand is far greater than any single company's reserves, any single company will always try to develop all of its own reserves. In other words, existing incentives cannot accomplish the putative goal set forth by DOI.

26-10

Nor has DOI to date reflected any initiative to use leasing as a tool for environmental quality. There is nothing in the DEISS that shows any comparison between tracts proposed for leasing and existing leases and mines, or any method for doing so, on any basis. There is nothing in the DEISS about the relative impacts of leasing any particular federal coal tract as compared to any other tract. The DEISS never mentions for example, that some of the New Mexico preference right lease applications (PRLAs) proposed for issuance lie on top of wilderness study areas (WSAs), and within sight and sound of Chaco Canyon National Historical Park. The largest single tract proposed for a San Juan Basin lease sale (Nageezi) lies far from any existing infrastructure, and atwart Pierre's Site, an outlying part of Chaco. "Environmental screening" is referred to (DEISS, p. 58) but is nowhere explained or revealed.

26-11

D. The BLM claims it needs to continue its leasing program "to maintain an orderly, predictable system that facilitates long-range planning..." (p. 12). Since the DEISS contains no description of what coal lands are actually proposed to be leased, there is no basis for assuming, or determining, if an "orderly, predictable system" is in fact contemplated, and if so what that system might be. As the DEISS itself says, "over-leasing can, however, lead to uncertainty as to where coal will be mined in the future." This implies that the contemplated program will decrease the predictability of future planning.

26-12

E. The BLM states that its proposed program is intended "to regionalize most decisions in coal leasing." (p. 12) It justifies this claim by pointing out the great weight to be given to region coal teams (RCTs). But the BLM will have the majority of votes on the RCT, and the RCT chairman will be a BLM employee (DEISS, pp. 305-6). In addition, even if an RCT votes to not hold a lease sale, or to downsize a proposed sale, DOI still reserves the right to overrule the RCT. The DEISS itself provides strong evidence that DOI will exercise this right. Although six state directors of the BLM have called for cessation of regional lease sales in the Alabama and Fort Union regions and the Colorado portion of the Uinta region, and for holding only one lease sale in the San Juan River region (DEISS, p. 396), the Proposed Action is still to proceed with a full coal leasing program. If DOI were in fact attempting to "regionalize decisions," it would presumably give states controlling voting power on the RCTs; allow other parties (notably Indian tribes) votes on the RCT; renounce its override authority over the RCTs; and accept the recommendations of its BLM state directors not to proceed with regional lease sales in several of the coal regions.

26-12a

F. Finally, BLM claims further coal leasing is needed "to promote competitive markets ..." (p. 12). The DEISS provides no quantitative justification for this claim. PRLA coal, for example, will not promote competition if it goes to existing producers. Nor will it promote competition if it goes to vertically integrated companies (such as electric utilities). Such companies will produce without regard to competitive forces, since they have a captive market (their electric utility parent) and guaranteed coal recovery from electric ratepayers through fuel pass-through tariffs. EDPA's previous comments on the proposed San Juan Basin lease sale have described how most tracts are effectively earmarked for a single company, in direct contravention of the goal of promoting competition.

26-13

The DEISS provides no evidence that increased competition will result from leasing, or that increased competition will lead to lower prices. If increased competition is a goal of leasing policy, then leases should be forbidden to companies which are already producers. No such proposal has been considered. There is thus no assurance that leasing will increase the number of companies competing to sell coal.

26-14

Even assuming that leasing would increase the number of mining companies holding coal reserves, there is still no evidence that the resultant "competition" would lead to lower prices for consumers. Because the primary market for coal is a regulated industry, many market incentives are weak or nonexistent. An electric utility with a coal-mining subsidiary will have a large incentive to buy from its own subsidiary (in order to increase the subsidiary's sales and profits) even if another company offers coal at a lower price, because it will know that it can pass all of its fuel costs on to its customers under traditional electric utility regulatory practice. It will also know that it has a monopoly on electricity sales within its service area, so it does not have to worry about another electric utility undercutting its price. The DEISS never addresses the fact that the primary market for coal is a monopolized industry with guaranteed cost recovery, with cost-reduction pressures far different than in a true free market.

26-15

COMMENTS AND RESPONSES

IV. Other general comments

A. Production Forecasts

The DEISS concludes that "the major factor influencing these differences [between the 1979 PES and 1985 DEISS] is the substantially reduced coal production estimates in 1985" (DEISS, p. 4). Those reduced estimates flow from both a more current and realistic view of the demand for coal, and an acknowledgement that lack of demand will constrain production. On this subject, the DEISS represents real progress. However, the DEISS is probably still too high in its estimates of future coal demand, since it assumes that electricity demand will grow inexorably and that the post-1995 base-load growth will be met by coal. The 'low' forecast in the DEISS forms a reasonable basis for analysis.

26-18

The DEISS is to be commended for attempting to quantify the issue of inter-regional market competition. The BLM has now considered three different leasing levels, three different levels of demand based on different economic assumptions, and three different years in the future. In every case but one (the year 2000 in the high demand scenario) it has found that total U.S. production will be unaffected by the choice of leasing policy. Even in the one case where the BLM finds a difference attributable to leasing, that difference is less than 1.5 percent (DEISS, p. 90).

B. Modeling Problems

The DEISS suffers from a common failure of large models: insufficient warnings of sensitivity to changed assumptions. For example, although the DEISS cites a Production Forecasts Technical Report (PFR), this report was in fact not published until March 1985, more than a month after the DEISS was issued. In the published PFR, 12 of the 30 figures shown in Figure 3-2e of the DEISS have been recalculated. Eleven of them change. For the year 2000 high demand case, San Juan River region production under the Proposed Action alternative has been revised from 56 down to 50 million tons. Production under the No Leasing alternative has also been revised, from 48 to 50 million tons.

26-19

These changes may not seem large, but their effect is to totally eliminate the difference between the Proposed Action and the No Action alternatives in that case, which formerly was the San Juan River Region case with the largest difference. Yet these changes in the results are neither the result of major changes in the input variables, nor the direct result of changes in any particular input variable. What the San Juan example shows is that the calculated differences between the alternatives being compared in the DEISS are quite small, and may well be artifacts of the modeling.

The DEISS also suffers, unavoidably, from its large scope. It compares its own forecasts to those of DRI and EIA, for example, and concludes that "current BLM forecasts are similar to other leading coal forecasts" (p. 118). This statement is approximately true in the aggregate - EIA's U.S. production forecast is about equal to the BLM's low forecast, while DRI's U.S. production forecast is almost exactly midway between the BLM's low and medium forecasts. But at the individual coal region level, the BLM's assertion is far from

26-20

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As for the claim that a surplus of potential supply over actual demand is necessary to assure competition, such a claim is true but in no way relevant to any need for increased coal leasing. Current coal markets are widely regarded as glutted by oversupply. The coal industry has been complaining that competition has held prices down. Yet this is occurring at a time when western production capacity is 11-51 percent above actual production (Table 1, section III.A, above; note that the 51 percent figure is based on 1990 production capacity, and is overstated).

26-16

The DEISS does not provide any data on production capacity under its proposed action. However, it does provide data for the production capacity which would result from the "Preference Right and Emergency Leasing Alternative" (p. 96). Table 2 shows the resulting excess of production capacity over demand. Clearly, DOI's proposed action would result in a coal production capacity far above any level needed to assure competition.

26-17

Table 2

Demand and Production Capacity, 5 Western Federal Coal Regions with issuance of PRLAs and emergency leases

Year	Demand (MM tons)	Potential Supply (MM tons)	Excess of Supply over Demand (percent)
1985	236(a)	262(b)-358(c)	11 - 52
1990	277(d)-314(e)	460-480(f)	46 - 73
1995	307(d)-420(e)	562-639(f)	34 - 108
2000	361(d)-540(e)	625-725(f)	16 - 101

(a) DEISS, Table 3-8, col. 1

(b) DEISS, Table 3-6, col. 1

(c) DEISS, Table 3-6, col. 2

(d) DEISS, Table 3-7, low demand case, PRLA issuance and emergency leasing

(e) DEISS, Table 3-7, high demand case, PRLA issuance and emergency leasing

(f) DEISS, Table 3-5.

G. Other commenters have argued that leasing is desirable because it will produce jobs and tax revenue. However, leases per se do not create jobs. Jobs are created when coal is actually mined and mining occurs when there is actual demand for coal for some use, generally electric power production (the great majority of all U.S. coal production is for use in powerplants). If Federal leasing does not occur, the DEISS shows that production will not be significantly different in the rest of this century. Thus, leasing will not create any jobs, or any tax benefits from coal production, that would not occur anyway. The DEISS admits as much in its description of its methodology, where it states that mining employment is calculated as a direct function of coal production levels (p. 321). Production levels, in turn, are shown to be barely affected by leasing levels (DEISS, Table 5-1).

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CONSULTATION AND COORDINATION

E. Environmental Impacts

One obligation of an EIS is to compare the environmental impacts of the alternatives being considered. The DEISS presents tables of impacts and compares their content to the results of the 1979 FES. But it contains an extremely limited discussion of the relative impacts of the different options being considered today. (The comparative analysis of the alternatives being currently considered, as distinguished from comparisons with the 1979 FES, is restricted to 10 pages and one table starting on p. 273.) Thus, the reader is not led to notice that environmental impacts in the Powder River region are claimed to be lower with leasing than without in seven of the nine cases considered, equal in one case, and mixed (higher in Wyoming, lower in Montana) in the last case. These claimed lower impacts result not from any site-specific comparison of current coal ownership with proposed leases (no such comparison exists in the DEISS), but purely from the claim that leasing will generally reduce production in the Powder River Region. All of the "analysis" of environmental impacts is driven by the production forecast model. The DEISS should expand its Chapter 5, include totals, and bring at least some of the results forward into the summary rather than unveiling them only at a point three-fifths of the way through the document.

V. Specific errors and inconsistencies

Internally, there are contradictions among the numbers reported in the DEISS and even the policies recommended at different points (compare the proposed action with pp. 395-6, which contain recommendations for eliminating regional lease sales in several regions). Externally, the DEISS is inconsistent with the Production Forecast Technical Report (PFTTR). Its input assumptions are inconsistent with those of the Department of Energy, as expressed in the Energy Information Administration's (EIA) annual 10-year energy forecast, most recently issued in January 1985. In addition, the DEISS contains various inaccurate statements. Examples are listed below.

It is noteworthy that, in virtually every case where the DEISS is inconsistent with other sources on subjects related to need, the DEISS figures indicate higher need than the figures from other sources. In other words, the inconsistencies do not appear to be random.

A. P.34: Revised description of Allon litigation to reflect settlement which has occurred.

B. P. 57, second paragraph: The BLM asserts post-1981 leasing "may have satisfied immediate needs."

Change "may have" to "has". The implication that there may be unmet immediate needs is inconsistent with the current situation of excess capacity (see Tables 1 and 2, above, regarding excess capacity in 1985 as calculated from figures in the DEISS).

C. P. 59, last paragraph: DOI says medium demand level requires 410 million tons of Western coal production in 1995. This figure contradicts both the DEISS itself (365 million tons, p. 90) and the PFTTR (362-3 million tons, Table V-1).

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accurate. For the San Juan River region, for example, even BLM's low forecast is 33 percent above DRI in 1990, 26 percent above DRI in 1995, and 12 percent above DRI in the year 2000. Moreover, more recent forecasts by DRI are lower. The DEISS does not mention the National Coal Association's forecast, which can be found in the EIA report cited by the DEISS. The EIA's 1984 forecast of coal demand is higher than any of the private sector forecasts which the EIA compares in its Annual Energy Outlook report (EIA, 1/85, p. 192), including that of the NCA.

C. Assumptions

The DEISS adequately identifies major assumptions, such as the one that higher oil prices lead to lower coal production (p. 93). It is less adequate at identifying subtle assumptions which can have significant results, such as the assumption (not documented in the DEISS) that coal plants will serve midrange as well as base-load electricity needs, outcompeting alternatives such as natural gas and cogeneration. The consequences of changing major assumptions, such as the one that all existing mines and leases will be limited to the lower end of their range of possible production levels (p. 95), are poorly identified.

Although the DEISS compares its results to those of some other forecasters, it does not compare its extreme cases to theirs. For example, the EIA mid-case is cited by the DEISS (p. 118). But the EIA high case is not shown. If it had been, the DEISS would have acknowledged that EIA's high case demand is not as high as DOI's medium case demand (DEISS, p. 90; EIA, 1/85, p. 168). Nor does the DEISS compare its input assumptions to those of others. For example, the DEISS assumes less 1995 nuclear capacity (and hence more coal demand) than its fellow federal agency, the EIA (EIA, Annual Energy Outlook 1984, 1/85, Tables A12, B12, C12, D12, E12; in all five scenarios, spanning high and low oil price and economic growth assumptions, EIA's 1990 and 1995 nuclear capacity figures are higher than those in the DEISS at p. 93). Similarly, the DEISS uses higher economic growth assumptions than EIA (DEISS, p. 93; EIA, 1/85, p. 9).

D. Omissions

Although the DEISS devotes effort, quite commendably, to showing how coal production will be affected by additional leasing, it devotes no attention at all to the question of how coal ownership would be affected by different leasing alternatives. The Federal Coal Leasing Act Amendments of 1976 (FCLAA) were passed in large part because of a perception that coal leases were being used for speculation rather than production, and a concern that public assets were being passed to private owners with minimal review and at minimal prices. This DEISS, covering the entire Federal coal program, makes no attempt to address these issues, and the impact on them of the proposed action. The DEISS does not even state how much coal can be expected to be leased, under the various leasing alternatives.

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COMMENTS AND RESPONSES

D. P. 59, last paragraph: DOI says current production capacity of "active mines" is 170 percent of production.

This figure contradicts data in Chapter 3, Table 3-6 (p. 97) shows current capacity of existing operations as 252 million tons in the five western federal coal regions. Table 3-8 (p. 114) shows production in the same five regions as 236 million tons. This calculates to 111 percent, not 170 percent. Put another way, p. 59 implies that current production capacity is 170 percent of 236 million tons, or 401 million tons. But according to Table 3-6, production capacity of "existing operations", even with new construction and new equipment, will not reach 401 million tons until between 1995 and 2000.

E. P. 59, last paragraph: DOI says that in 1995 "overall projected productive capacity will have dropped to 130 percent of forecasted coal production."

In the preceding sentences "productive capacity" refers to production capacity from "active coal mines," and "forecasted coal production" refers to the "medium production level" (p. 59). The 130 percent figure is not consistent with these definitions (see Table 3-6, "Capacity of Existing Operations," p. 97, and Table 3-7, "Preliminary Estimates of Annual Coal Production," pp. 98-101).

F. P. 90, Table 3-1, "Regional Production Forecasts"

None of the numbers reported is consistent with the PFTR. In the PFTR, higher production is reported for every case analyzed except the year 2000 in the high demand case, where the PFTR is sharply lower. For the country as a whole, Table 3-1 forecasts high case demand in the year 2000 as 1800 million tons under the Proposed Action, while the PFTR forecasts 1507 million tons for the same case.

G. P. 93, Table 3-2, "Nuclear Capacity Assumptions for Production Forecasts"

None of the numbers reported is consistent with the values used in the PFTR, or with the values used by the Energy Information Agency (EIA). In the PFTR, all nine of the values shown are lower than the lowest shown in Table 3-2. In the EIA's "Annual Energy Outlook 1984" (cited below as AE084; published 1/85) 1990 and 1995 nuclear capacity is shown higher than any of the values in Table 3-2 for all five scenarios reported (which cover high and low economic growth as well as high and low oil price trajectories).

H. P. 93, Table 3-3, "World Oil Prices and U.S. Growth Rates"

Except for the mid-case 1990 oil price, none of the numbers reported in Table 3-3 is consistent with the numbers used in the EIA's AE084. The low case in Table 3-3 uses oil prices over 15 percent below those in the EIA forecast, and a growth rate 30 percent higher than in the EIA forecast. If it had used the EIA's assumptions, DOI's low coal production forecast would have been noticeably lower. Instead, DOI's lowest economic growth rate assumption is 2.5 percent per year in 1985-2000, 30 percent higher than actual experience over the 1973-83 decade (as reported by the EIA).

DOI's electricity growth assumptions are also quite high, with the middle and high case assumptions both 3 percent or more per year. This is higher than the electric industry itself, which predicts 10-year growth rates of under 3 percent per year (National Electricity Reliability Council, NERC, 1984).

I. P. 94, "Refurbishing of existing oil and gas plants" cuts coal demand in the low demand case.

This is inconsistent with common sense. Refurbishing makes the most sense when either oil/gas prices are low (so that it makes sense to keep on using plants which burn those fuels) or when electricity demand is high (so that plants do not have to be retired) or when capital is short due to extensive construction programs (because refurbishing is less capital-intensive than building new plants). All three of these situations are associated with high coal demand, not low. Refurbishments can be expected to act as a brake on high coal demand, but apparently DOI has not considered them as such.

J. P. 95, Table 3-4, "Coal Production Capacity - No New Federal Leasing"

The 1990 figure for the Montana portion of the Powder River (42 million tons) contradicts the figure in the PFTR (33 million tons, in Table IV-1).

The 1995 and 2000 figures for the San Juan River coal region (42-61 and 48-70 million tons, respectively) squarely contradict the data on coal production capacity shown in the San Juan River Region Coal DEISs and FEIS (29 and 26 million tons, respectively, in Figure 1-1 of all three documents).

K. Pp. 96-7: "Details of changes made for this analysis and their use in the production forecasts are presented in the PFTR."

The PFTR contains a total of ten pages of text and 5 pages of numerical tables, plus various pages containing lists of acronyms and maps which also appear in the DEIS. It looks only at the medium and high demand scenarios, and not at the low demand scenario. Except for a table which disaggregates electrical demand by region (without giving a national figure to allow comparison to the DEIS), it contains only tables which already appear in the DEIS, albeit with different numbers. Thus, the PFTR does not in fact present any explanation of Chapter 3, or any additional useful details.

L. P. 97, Table 3-6, "Capacity of Existing Operations"

The production capacity without new construction of the United-Southwestern Utah coal region is reported as 21 million tons. This contradicts the memo reproduced on p. 396, which reports expected 1984 production of 15.5 million tons, equal to 60 percent of capacity, for an implied capacity of 25.8 million tons per year in 1984.

M. Pp. 98-101, Table 3-7, "Preliminary estimates of Coal Production"

Where comparison is possible (for the medium and high demand cases, no leasing and proposed action alternatives only), the production levels reported are the same only 6 times out of 60.

Because no data are reported for parts of the west outside of the five federal coal regions (e.g., Arizona, Washington, Alaska, and the Raton Basin of New Mexico and Colorado), it is impossible to tell if the data reported are consistent with the overall western production data in Table 3-1 (p. 90).

N. P. 104, DOI defines the San Juan River Region to include northeast Arizona.

This definition is inconsistent with the maps on pp. 13 and 14. It is also inconsistent with the current production data given for the San Juan River region on pp. 114 (23 million tons) - if northeast Arizona were part of the San Juan River Region, the number would be more like 34 million tons (PFTR, Table VI-1).

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- O. P. 105, Figure 3-2d, "Utah-Southwestern Utah Coal Region". The figure shows production more than doubling from 1983-95 under all scenarios. This is not consistent with the fact that DOI elsewhere assumes that Utah region coal is all underground mined (p. 189), while incremental production in other regions is 100 percent from surface mines (calculated from data on pp. 172, 329), resulting in a labor cost to operate new Utah region coal mines more than triple that to operate new mines in the other four western coal regions examined (p. 321). Thus Utah region coal production could only be expected to grow so dramatically if it was serving some kind of local demand, for which it had a major transportation advantage to outweigh its labor cost. But the two utilities which dominate the Utah region (Utah Power and Light in Utah and Colorado-Ute Electric Association in Colorado) have no plans to start building any new coal plants. The only new plants entering operation in the region are the Hunter 3 plant (400 Mw in 1983), Craig 3 (400 Mw in 1984), IPP (1560 Mw in 1986-7), Moon Lake 1 (400 Mw in 1985) and a coal-gas plant (100 Mw about 1990). All will be in service by 1990, leaving no explanation of the 1990-95 demand growth shown in Figure 3-2d. Their total capacity of 2860 Mw is far below the amount necessary to explain the doubling of Utah region demand shown in Figure 3-2d. DOI's demand number may be reflecting demand from plants that have in fact been cancelled or deferred indefinitely, such as IPP 3-4 (cancelled), Colorado-Ute's Southwest 1-2 (cancelled), Hunter 4 (cancelled in 1985), Moon Lake 2 (deferred), and the U.S. Steel Geneva plant near Provo (likely to shut down within the decade).
- P. P. 110, "Western production will drop (in the No Action case, in the year 2000) by 65 million tons from its forecast under the Proposed Action." The number 65 million contradicts the value in the PFTR, which is only 30 million tons (PFTR, Table 1-1).
- Q. P. 111, "Total U.S. production will drop by 25 million tons (in the year 2000, in the No Action case as compared to the Proposed Action case)." The number 25 million contradicts the value in the PFTR, which is only 10 million tons (PFTR, Table 1-1).
- R. P. 114, Table 3-8, "Coal Distribution From Western Leasing Regions". The 1985 figure for the San Juan River region (23 million tons) is inconsistent with the figure on p. 395 for "current production" as of October 1984 (25 million tons). The 1995 figure for the Ft. Union region with high demand and the Proposed Action (36 million tons) is inconsistent with the figures shown on pp. 102 and 98 (37 million tons).
- S. P. 115, Table 3-9, "Comparison of Regional Market Shares at Year 2000 Production Levels". This table appears to have major computational errors in it. For example, the Powder River market share is shown as 16 percent for the high demand case and the Proposed Action case. Table 3-8 (p. 114) shows Powder River production in that case as 374 million tons. Table 3-1 (p. 90) shows U.S. production in that case as 1800 million tons. This calculates to 21 percent, not 16 percent.
- The numbers in Table 3-9 also contradict the data in the PFTR. Using the same Powder River example, the corresponding PFTR production levels are 354 million tons for Powder River and 1507 million tons for the U.S. The resultant Powder River market share is $354/1507 = 23$ percent, more than twice the 16 percent shown in Table 3-9.
- T. P. 115, DOI claims its 1979 low case demand forecast "compares favorably to reality". This claim is inconsistent with reality. The 1979 PES low case predicted 1977-85 growth in annual production for the 5 western federal coal regions of 172 million tons per year (Table 3-10, p. 116). Now DOI says that the actual 1977-85 growth will have been 113 million tons (1977 from Table 3-10, p. 116; 1985 from Table 3-8, p. 114). Thus, the 1979 PES low case overestimated the amount of actual production increase for the western federal coal regions by over 50 percent. For the U.S. as a whole, the 1979 PES low demand case estimated 1977-85 annual production growth of 302 million tons (p. 118), versus the most recent DOI estimate of 212 million tons (based on 1985 production from the PFTR, Table 1-1) and 1977 production from p. 110). For the country as a whole, then, the 1979 PES low case was 38 percent too high in its growth estimates.
- U. P. 117, Table 3-11, "DRI Coal Production Forecasts". The data presented contradict the more recent DRI data in the PFTR (Table VI-1). The 1985 DRI forecast is substantially lower than the DOI forecast for the U.S. as a whole (12 percent below DOI's medium forecast in the year 2000) and is below Table 3-11 for both total U.S. production (6 percent lower in 2000) and Western production (13 percent lower in 2000). Both the Table 3-11 and 1985 DRI data are substantially different from the DOI forecasts for the Powder River (DRI is higher) Green River (DRI is lower) and San Juan River (DRI is lower) regions, contradicting DOI's assertion that DRI's forecast is similar to its. The large inter-regional differences call into particular question the need for leasing in the San Juan and Green River coal regions, where DOI's demand forecasts are much higher than DRI's.
- V. P. 118, Table 3-12, "EIA Coal Production Forecasts". The results presented appear to come from EIA's AEO83, not the more current AEO84, published in January 1985. Its U.S. totals match those in the AEO83. The EIA data reported for the Western U.S. may not be consistent with the DOI forecasts on p. 90. The EIA's AEO reports coal demand only for east and west of the Mississippi River (AEO84, Table A18). DOI's definition of the "Midwest" includes Texas, Oklahoma, Kansas, Nebraska, and Iowa, all of them west of the Mississippi. Therefore it is impossible to trace a source for what DOI calls its "EIA" data.

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- O. P. 105, Figure 3-2d, "Utah-Southwestern Utah Coal Region". The figure shows production more than doubling from 1983-95 under all scenarios. This is not consistent with the fact that DOI elsewhere assumes that Utah region coal is all underground mined (p. 189), while incremental production in other regions is 100 percent from surface mines (calculated from data on pp. 172, 329), resulting in a labor cost to operate new Utah region coal mines more than triple that to operate new mines in the other four western coal regions examined (p. 321). Thus Utah region coal production could only be expected to grow so dramatically if it was serving some kind of local demand, for which it had a major transportation advantage to outweigh its labor cost. But the two utilities which dominate the Utah region (Utah Power and Light in Utah and Colorado-Ute Electric Association in Colorado) have no plans to start building any new coal plants. The only new plants entering operation in the region are the Hunter 3 plant (400 Mw in 1983), Craig 3 (400 Mw in 1984), IPP (1560 Mw in 1986-7), Moon Lake 1 (400 Mw in 1985) and a coal-gas plant (100 Mw about 1990). All will be in service by 1990, leaving no explanation of the 1990-95 demand growth shown in Figure 3-2d. Their total capacity of 2860 Mw is far below the amount necessary to explain the doubling of Utah region demand shown in Figure 3-2d. DOI's demand number may be reflecting demand from plants that have in fact been cancelled or deferred indefinitely, such as IPP 3-4 (cancelled), Colorado-Ute's Southwest 1-2 (cancelled), Hunter 4 (cancelled in 1985), Moon Lake 2 (deferred), and the U.S. Steel Geneva plant near Provo (likely to shut down within the decade).
- P. P. 110, "Western production will drop (in the No Action case, in the year 2000) by 65 million tons from its forecast under the Proposed Action." The number 65 million contradicts the value in the PFTR, which is only 30 million tons (PFTR, Table 1-1).
- Q. P. 111, "Total U.S. production will drop by 25 million tons (in the year 2000, in the No Action case as compared to the Proposed Action case)." The number 25 million contradicts the value in the PFTR, which is only 10 million tons (PFTR, Table 1-1).
- R. P. 114, Table 3-8, "Coal Distribution From Western Leasing Regions". The 1985 figure for the San Juan River region (23 million tons) is inconsistent with the figure on p. 395 for "current production" as of October 1984 (25 million tons). The 1995 figure for the Ft. Union region with high demand and the Proposed Action (36 million tons) is inconsistent with the figures shown on pp. 102 and 98 (37 million tons).
- S. P. 115, Table 3-9, "Comparison of Regional Market Shares at Year 2000 Production Levels". This table appears to have major computational errors in it. For example, the Powder River market share is shown as 16 percent for the high demand case and the Proposed Action case. Table 3-8 (p. 114) shows Powder River production in that case as 374 million tons. Table 3-1 (p. 90) shows U.S. production in that case as 1800 million tons. This calculates to 21 percent, not 16 percent.

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COMMENTS AND RESPONSES

RESPONSES TO COMMENT LETTER 26

- 26-1a The commenter incorrectly concludes that issuing PRAs and new leases could lower coal production in the San Juan River Region. Though a program allowing more leasing in other regions could lead to lower production in the San Juan River Region, more leasing in the San Juan River Region itself would not cause such a reduction.
- 26-1b The mine capacities used in the draft and final supplemental EISs reflect the most up-to-date evaluation by the BLM field staff, including data submitted by EDF in 1983.
- 26-1c The high demand case may be optimistic when compared to some of the other demand forecasts referred to in the RFS, but those are the medium level forecasts from those organizations. The DOE/EIA and DOE Policy Offices use higher growth rates in their high forecasts. The forecast scenarios and the capacity estimates were used to provide a range of potential demand for leases that is possible without being unrealistic. Use of such a range is the only way to evaluate a realistic range of potential impacts of alternative coal leasing programs.
- 26-1d The lowest point in capacity projections was used to avoid underestimating the impacts of more leasing. If the actual capacity is higher, the impacts would lie between those of the Proposed Action and those of No New Federal Leasing.
- 26-1e The revised analysis in the final supplemental EIS shows that under the Proposed Action, significant increases over No New Federal Leasing in production, jobs, and tax revenues at all production levels and for all years would occur only in the Uinta-Southwestern Utah Region. Therefore, the contention that the only economic achievement of the Proposed Action would be to turn over federal resources to private owners is supported by the revised analysis in only one (Uinta-Southwestern Utah) of the six regions. In two other regions (Fort Union and the Alabama Subregion), the effects would be neutral. In the remaining three regions (Powder River, Green River-Rams Fork, and San Juan River), the opposite of this contention would occur.
- 26-2 The main reason for preparing summary tables of the different impacts of different alternatives for the West as a whole would be to make comparisons with the Midwest and Appalachian regions. Because the revised coal production forecasts for the aggregated regions (Table 3-1) show only small differences (less than 1 percent) between the Proposed Action and No New Federal Leasing, impacts of these minor shifts between the three major aggregated coal-producing regions would be insignificant and are not assessed in the supplemental EIS. The text in Chapter 5 has been changed to reflect the above statement. Developing a summary table in addition to Tables 5-1 and 5-2 would not serve a useful purpose in Chapter 5.

- 26-3 The resource impact data by individual coal regions in Table 5-1 can be combined to develop totals for each alternative by production levels and years. Coal-related population, which is a function of employment, was presented in Table 5-1, since population is the best indicator of impact severity (Socioeconomics, Chapter 4, page 135) of the draft supplemental EIS. Coal-related employment is given in Table 4-3 in Chapter 4.
- 26-4 The first part of this comment is correct. The supplemental EIS was not designed to analyze leasing specific amounts of coal or leasing specific sites (see Chapter 4, Scope of the Analysis, page 121, draft supplemental EIS).
- 26-5 Because the supplemental EIS does not involve leasing specific sites (see Chapter 5, Scope of the Analysis, page 121, draft supplemental EIS), impacts to specific parks, WSAs, or wilderness areas cannot be analyzed. These impacts would be analyzed in regional and site-specific EISs.
- 26-6 Royalties were treated the same for all projected levels of production because the analysis did not differentiate among land ownerships (see Chapter 4, Scope of the Analysis, page 121, draft supplemental EIS). The royalty estimates in Table 4-5 are based on a half share of federal coal royalties that would be remitted to the states. This estimate provides a reasonable royalty approximation for program-level analysis. BLM recognizes that royalties would differ, depending upon ownership, when the analyses are conducted for the regional EISs.
- 26-7 Impacts to the environment would stem from coal development and use, not from leasing itself. Leasing levels, the amounts of federal coal reserves studied as the proposed actions in regional EISs, are the result of typical mid- and long-range market studies by regional coal teams (RCTs). This programmatic supplemental EIS cannot predict what leasing levels would be set by each RCT or what tracts would be delineated, offered, and leased. The Department of the Interior believes that such projections and analyses are not necessary for purposes of this document.
- 26-8 Part of the program described for the Proposed Action (Chapter 2) is the preparation of site-specific environmental analyses for each delineated tract (tract profile) and a regional EIS analyzing site-specific and cumulative impacts. If the Secretary of the Interior selects this program alternative, each regional coal team will review and update existing regional environmental documents as needed. A regional market analysis will be used to make appropriate adjustments or revisions to the leasing level or target. Also see response to Category 1, Adequacy of the Supplemental EIS, in the Categorical Analysis section of this chapter.
- 26-9 As mentioned in the response to comment 26-2 and reflected in the revised text of Chapter 5, the revised coal production forecasts for the aggregated regions (Table 3-1) show only small differences (less than 1 percent) between the Proposed Action and No New Federal Leasing, and impacts of extremely slight shifts between the

CONSULTATION AND COORDINATION

- 26-12 The supplemental EIS is a programmatic document, which describes the effects of alternative coal leasing program. Site-specific impacts of leasing federal coal tracts will be discussed in regional EISs if the Proposed Action is adopted.
- BLM believes that the proposed federal coal management program is structured to allow orderly, predictable leasing of federal coal. The proposed program requires land use planning and the applying of the four coal screens, which eliminates large areas of federal coal from further consideration for leasing. At the beginning of activity planning, the regional coal team will review market needs. If no demand exists for coal, activity planning will be postponed. Demand for federal coal, on the other hand, will trigger the exhaustive process of calling for expressions of leasing interest, delineating tracts (including preparing site-specific analyses), ranking and selecting tracts for study in the regional EIS, and recommending tracts for sale to the Secretary of the Interior. These processes will be carried out under the guidance of the regional coal team and will be subject to public involvement at every major step. BLM believes this system will reduce the chance of overleasing and provides a sound framework within which federal coal can be predictably offered for lease while ensuring a high degree of environmental protection.
- Because the regional coal teams (RCTs) are only advisory groups, the Secretary of the Interior cannot by law delegate decisionmaking authority to them. The Secretary (or his delegated representative in the Department of the Interior) ultimately makes any coal lease sale decision, but in this process he considers the recommendations of the RCTs as well as the advice of the governors and other federal officials. The recommendations of the RCTs weigh heavily in the Secretary's deliberations, but national interest must also be considered. If national interest conflicts with an RCT recommendation, the Secretary may overturn the RCT. He may also overturn an RCT recommendation by accepting the advice of a governor of a state affected by such decision if this advice is contrary to the RCT recommendation. Also see response to Category 5, Science Advisors, in the Categorical Analysis of comments section of this chapter.
- No action has been taken on the proposals regarding the Fort Union and San Juan River regions and the Alabama Subregion because the entire coal leasing program is under review. If the Secretary chooses to continue the existing program, these proposals will be considered.
- A coal leasing program is needed to address the objective of promoting a competitive coal market. The actual need for leasing is determined during activity planning. Also see response to Category 6, Regional Coal Teams, in the Categorical Analysis of comments section of this chapter.
- The effect that more federal coal leasing could have on the level of competition within the coal industry is difficult to measure. Examples can be found, especially in the short run, of more leasing not increasing the level of competition. Given time for the market
- 26-13-26-15

- three major aggregated coal-producing regions would be insignificant. Because no significant difference exists between production under the Proposed Action and No New Federal Leasing, no analytical basis exists for supporting the contention that every new job created in the West by the Proposed Action would cost more than one job in the East.
- BLM believes that the need does exist for continuation of a national program to consider coal leasing. This need is clearly set forth in Chapter 2 of the final supplemental EIS. Also see response to Category 1, Adequacy of the Supplemental EIS, in the Categorical Analysis section of this chapter.
- Chapter 2 describes in detail the process to be used by RCTs in deciding to begin leasing. In general, however, each regional coal team (RCT), in open forum, analyzes market studies, reviews data from completed land use plans, and obtains the benefit of several generations of public comment in arriving at a decision as to whether to hold regional coal lease sales. Specifically, a recent proposal gives RCTs the discretion to postpone regional coal leasing activities for a definite or indefinite time.
- The cited statement is one of five objectives used to support the Department of the Interior's proposal to continue the federal coal management program. The Department is not saying that it proposes to continue the program because additional coal leasing is needed but that it proposes to continue the program so that the need to lease coal to meet this and other objectives can be considered and, if such a need is determined, to meet that need.
- By making coal with the least environmental cost available through the planning and leasing processes, the Department of the Interior can allow the market to select tracts for development while reserves with higher environmental costs remain undeveloped.
- A major component of the regional coal activity planning process is tract ranking. The regional coal teams (RCTs) rank tracts using three factors, one of which involves environmental factors. By assigning ranks of high, medium, and low desirability for leasing, the RCTs can assess the impacts of developing one tract relative to others. Although not explicitly recognized in the Proposed Action, opportunities for comparison of the impacts of leasing tracts with any existing leases or mines can be made at the discretion of the RCT. The National Environmental Policy Act does not require that environmental values take precedence over other values. Therefore, in some regions, the level of industry interest and the value of the coal may outweigh environmental considerations, especially if adverse impacts can be mitigated. Chapter 2 has been revised to more completely explain environmental screening procedures.
- If the Secretary of the Interior selects the Proposed Action, each RCT will address issues specific to its region. All procedures completed for ongoing rounds will be reviewed before any final leasing recommendations and decisions are made.
- 26-8
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26-17

No information is given on the change in the capacity estimates for any region under the Proposed Action because no decisions have been made. Under the Proposed Action, those determinations would be made during activity planning. It is not clear that the Proposed Action would dramatically increase a region's productive capacity. The Proposed Action does present the opportunity for the responsible Federal and state organizations to make decisions on changing a region's productive capacity. Capacity estimates were, however, formulated for the Preference Right and Emergency Leasing Alternative, which would simply react with little discretion and no regional activity planning.

26-18

The production levels used for the forecasts were selected to present a range that would probably encompass future occurrences. The high production level electricity demand growth may be optimistic, but deliberately so. The impacts of the coal leasing program are expected to occur more significantly only at the higher demand level, and BLM wanted to be sure that the supplemental EIS encompassed these impacts. The production levels all assume that electricity demand will, on average, continue to grow except during severe recession years. The main difference from electricity demand projections of the 1970s is that, instead of electricity growing twice as fast as the economy, it now tracks more closely to GNP growth. In the final supplemental EIS analysis, electricity demand is not projected to grow any faster than the GNP. The analysis does not assume that all post-1995 baseload growth will be met by coal, only that no baseload oil plants will be built and that no new nuclear plants will be built except for those almost finished.

New construction to meet additional baseload requirements as determined by the model would basically involve coal versus gas plants. The mix of coal plants versus gas plants depends on the regional growth rates for electricity demand. Weighting the higher growth in the sunbelt states, especially as was done in the additional sensitivity analysis presented in the Production Forecasts Technical Report (BLM 1983b), results in more gas turbines built. Even at that production level, however, more baseload demand would be mainly met by coal-fired plants. Gas tends to gain more in the intermediate and peaking loads. No one scenario forms a basis for any analysis. Too many uncertainties exist.

26-19

In addition to changes in some assumptions, the Production Forecast Technical Report (BLM 1983b) was the first presentation of forecasts that used the National Coal Model (NCM) tested out to the year 2000. Because some regions are highly sensitive to alternative assumptions, a wide range of alternative assumptions was used in the sensitivity analysis to arrive at the forecasts. Once the sensitivity analysis is complete, the environmental analysis can be conducted on a range of representative forecasts. The Production Forecast Technical Report not so much replaced the forecasts in the draft supplemental EIS as it provided more sensitivity analysis and more detail on the input assumptions.

and utility rate commissions to react, however, the positive effects to the consumers of an increase in the number of suppliers will be felt. In addition, state public utility commissions do not always allow full costs to pass through, thus putting pressure on utilities to get the best contracts they can from coal producers. Coal producers have no guaranteed cost recovery, nor is the industry monopolized. Because of the long-term nature of transactions in the coal market, a 20-year supply contracts, the total impact of the increase in the level of competition is not immediately felt. Some of the effects, however, are immediately apparent. The current prices in new coal contracts in the Powder River region are below \$7 per ton, a price that compares to the late 1970s and early 1980s when \$11 to \$15 per ton was commonly received, with some transactions as high as \$30 per ton. The extent that this drop in contract prices is directly due to federal leasing is unknown, but the drop in prices clearly results from the current relationship between available supply and current expected demand.

The objective is to promote competition, not to ensure competition or ensure new entries into the market. Only currently producing companies might acquire all offered federal coal leases in a region. Even under that occurrence, however, the level of competition will be increased as currently producing companies will have increased the region's supply of available reserves.

The number of companies competing need not be infinite. In fact, beyond having two competing companies, a company's ability to compete is a more important consideration than the number of companies. Forbidding producing companies from acquiring new federal coal leases would greatly impede competition and amplify existing competitive advantages and disadvantages between producing companies. Those less effective producing companies would have one less avenue for improving their competitive situation. New entries would likely have reservations about entering into an industry with a major impediment to future growth and expansion. New entries would likely have one property to develop and then be left with a severely limited future.

Many barriers block entry, mainly the risk associated with acquiring a continuing supply of reserves, which is smaller for large, well-established corporations. A reduction in this risk lessens this advantage for large corporations and enhances the likelihood of new entries. This process can occur only gradually with assurance of a stable long-term coal leasing program.

The current supply and demand for coal may not justify immediate wide-scale federal coal leasing, but such a determination is not made in this programmatic EIS. Nor would the Proposed Action immediately resume coal leasing. The proposal is to have a program that ensures that the federal and state governments have the option to assess the need for leasing and can respond appropriately. Under the Proposed Action, leasing needs would be assessed and responded to during activity planning.

26-16

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26-20 Because the production levels in the draft supplemental EIS were purposely optimistic to ensure that the probable impacts were included in the analysis, the results are expected to be slightly higher than other forecasts that try to predict actual production. Regions whose forecasts particularly diverge from other forecasts were examined in more detail to determine if specification errors caused these differences. No specification errors were noted.

26-21 The more detailed assumptions on the operation of the NCM may be obtained from DOE/EIA's model documentation. In general, the type of load various types of powerplants can satisfy is similar to current conditions. In many regions coal plants already satisfy intermediate loads, and in some regions they also meet seasonal peaks. The model allows coal plants to meet these needs, but coal plants still must be cheaper than the alternatives. The lower end of capacity estimates was used to ensure that potential impacts of alternatives were not understated. This is the proper strategy for the EISs although lease sale activity planning may take a different approach, depending on public comments at that time and regional coal team decisions. The impacts of the capacities being above the low end of the range would fall somewhere between the impacts of No New Federal Leasing and the Proposed Action, thus reducing the net difference between the alternatives.

26-22 The supplemental EIS uses deliberately optimistic forecasts to prevent understatement of environmental impacts. The low production level finds no essential difference in impacts among alternatives, so the supplemental EIS does not need to evaluate lower growth assumptions. Because of the time delay between the analysis and publication of the EIA Annual Energy Outlook, EIA was unable to include recent nuclear plant delays and cancellations. The regional nuclear capacities will be included in the final supplemental EIS.

26-23 Although BLM does not know how federal coal holdings will be affected by the alternatives, the effects of federal coal holdings are likely to be the same under each alternative. The procedures for determining the levels of leasing are discussed in the supplemental EIS. The actual level of leasing is addressed during activity planning. The impact analysis in this supplemental EIS focuses on the impacts of the different levels of production, not the impacts of different levels of leasing. Analysis of the impacts of leasing is handled in the regional EISs as part of activity planning. The issue of lease issuance before a thorough review or receipt of fair market value is part of each alternative program presented. The actual review and valuation also occur as part of activity planning. Table 1-5 contains a summary of the recommendations of the Commission on Fair Market Value and the Department of the Interior's proposals in response. These proposals will provide adequate review and ensure that the public receives fair market value for the leased coal reserves.

26-24 Chapter 5 has been expanded by transferring the general comparison of impacts for the 1979 Preferred Program to impacts projected for the 1985 Proposed Action from the Summary of the draft supplemental

EIS. The Summary has been revised to highlight general impacts for the six coal regions. Table 5-1 in Chapter 5 includes totals by region for the comparative analysis.

26-25 Chapter 2 describes the Proposed Action as including the option of changing a region from regional sales to lease by application if demand does not warrant continuing regional activity planning. The option to return to regional sales is possible if future demands increase. Under the Proposed Action, the switch would be recommended by the regional coal teams (RCT). Similar actions were undertaken by the RCTs for the Oklahoma Subregion and the Denver-Raton Mesa Region.

26-26 The supplemental EIS uses deliberately optimistic forecasts to prevent understatement of environmental impacts.

26-27 The text has been revised to reflect this settlement.

26-28 BLM cannot make such an absolute statement that regional coal leasing has satisfied all immediate needs. The market needs will be extensively analyzed before and during activity planning. BLM has a need for a continuing stream of maintenance and bypass leases that is not solved by excess capacity elsewhere.

The forecasts used in the draft supplemental EIS and the commenter's letter suffer from being too large in scope. They cannot capture the immediate need for ongoing emergency leasing to lease bypass and maintenance tracts. Potential localized socioeconomic disruptions under No New Federal Leasing would be insignificant on a national scale but would be considered by the regional coal team (RCT) under the Proposed Action. As for large-scale leasing, BLM is unaware of any immediate demand. Because of the uncertainties of economic growth, energy demand, changing technology, issuance of leases from PELAs, the status of nuclear power, and relinquishment of old leases due to Sections 2(a)(2) and 7 of the Mineral Leasing Act, no one can be certain of the need for more leasing over the next 5 years. By having a program in place, BLM can plan for alternatives and respond to needs as they occur.

26-29 The commenter is correct. This error was due to misreading of the table when the text was written. The text has been corrected.

26-30 The numbers have been reviewed for accuracy and consistency, and the text has been corrected where needed.

26-31 The statement in the last paragraph on page 59 of the draft supplemental EIS refers to 1995 medium production level capacity and demand in the Powder River Region, not in all regions. The text has been changed to clarify this matter.

26-32 The Production Forecast Technical Report (BLM 1985b) was provided not as a substitute but as additional analysis with more background detail on assumptions. The major shift in production in the year 2000 at the high production level mainly resulted from changes in the pattern of growth to faster growth rates in the sunbelt states

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resulting in a higher use of gas for electricity generation. This final supplemental EIS, however, is based on a consistent set of assumptions derived from the latest data and comments. The numbers in Chapter 3 and Appendix 8 are consistent.

Because of the time delay between the analysis and publication of the EIA Annual Energy Outlook, EIA could not include recent nuclear plant delays and cancellations. Similarly, the Production Forecast Technical Report (BLM 1985b) used more up-to-date information than the analysis in the draft supplemental EIS. The regional nuclear capacities included in the final supplemental EIS are based on the most up-to-date information.

In the Energy Information Administration's (EIA) 1984 Annual Energy Outlook, the high and low economic growth scenarios were run only with their middle world oil price assumption. The high and low oil price assumptions were only run with the middle economic growth scenario. The actual EIA low world oil price in 1990 (1984 dollars) was \$25, lower, not higher, than the draft supplemental EIS low price. EIA used a wider range of growth rates than the draft supplemental EIS at both ends. An infinite number of alternative scenarios could be used. The three used in the draft supplemental EIS were chosen to reflect a reasonable range of possible alternatives. The Environmental Defense Fund quotes the economic growth rate from EIA from 1978 (a boom year just before the first oil shock) to 1983 (the worst recession year since the depression). The following table compares statistics for that period to those for 1978-84 and 1974-84 and corresponding statistics from the draft supplemental EIS forecasts.

GROWTH RATES

Period	GDP	Elec- tricity	Oil Price	Coal Production
1973-83	2.0	2.3	15.0	2.7
1973-84	2.4	2.64	12.0	3.7
1974-84	2.45	2.95	2.0	3.9
1985-2000—Draft Supplemental EIS				
Low	2.0	2.3	4.6	2.7
Mid	2.9	3.0	3.0	3.8
High	3.2	3.5	2.5	4.6

The 1973-84 statistics are more relevant as they compare two relatively good years. Considering the depressing effects of the jumps in world oil prices on the economy and current expectations of future prices, the three production levels are reasonable. The high production level is optimistic to prevent the understatement of environmental impacts.

26-35

Oil and gas plants are refurbished to extend their lives and forgo the need to build new powerplants. This situation would occur when electricity demand is growing slowly and coal is a relatively high-cost resource, especially in the low coal demand case in the Northeast where there are many aging oil plants and coal is expensive. Although the price of oil is high and the price of coal is low, coal transportation costs increase with the oil price because diesel fuel is a component of this cost. Thus the consumption cost of long-haul coal will especially increase with the oil price. More importantly, the demand for electricity is not increasing enough to justify investing in new powerplants. The high oil price will tend to drive inflation, which will then increase interest rates and the cost of capital, also decreasing incentives for new investment.

26-36

The capacity figures for Montana have been made consistent in the final supplemental EIS. The production capacities in the San Juan River Region Coal draft EIS (BLM 1983a) and final EIS (BLM 1984c) were derived under more conservative assumptions used at that time. The capacity figures in the final supplemental EIS reflect the latest available information.

26-37

The Production Forecast Technical Report contains four pages describing the National Coal Model (NCM), a description that was not included in the draft supplemental EIS. Most of the description does not duplicate EIA National Coal Model documentation but included the modifications and application of the model for the supplemental EISs. This technical report provides a detailed table of the regional nuclear capacities, which was not in the draft supplemental EIS. As acknowledged by the Environmental Defense Fund, it does contain a more detailed breakdown of electricity demand growth rates. These items along with the coal supply assumptions under the No New Federal Leasing Alternative represent 99 percent of the questions received during the analysis process. They also represent the most important assumptions in the NCM. The analysis presented in the Production Forecast Technical Report was not a repeat of the draft supplemental EIS but provided more sensitivity analysis and tested use of the NCM to the year 2000. The final supplemental EIS contains details in Appendix 8.

26-38

Table 3-6 in the final supplemental EIS shows a capacity without new construction of 23 million tons, which reflects the most recent review of capacity.

26-39

The Production Forecast Technical Report (BLM 1985b) presents alternative sensitivity analysis, so exact agreement is not to be expected between this report and the draft supplemental EIS. Forecasts in the final supplemental EIS are presented in more detail and are consistent with Table 3-1.

26-40

This statement on page 104 in the draft supplemental EIS is in error. Arizona is not included in the San Juan River Region, and the forecasts do not include it. Arizona is considered a separate coal supply region.

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- 26-41 Although the Uinta-Southwestern Utah Region has higher coal mine costs, it has much better quality coal than any of the other Western regions. The high British thermal unit (Btu) content makes the cost per Btu for hauling and mining closer to costs for other regions, particularly for hauling coal west. With more cancellations of nuclear power plants, many experts believe that severe power shortages will occur in the 1990s. The West Coast is expected to be in the worst condition. For the 1995 forecasts and especially for the 2000 forecasts, many power plants are projected to be built that are not now planned and the Uinta-Southwestern Utah Region would be potentially affected. Mining and hauling costs have been verified for the analysis for the final supplemental EIS to ensure that the Uinta-Southwestern Utah Region is not receiving undue advantage in the model.
- 26-42 The Production Forecast Technical Report provides (BLM 1985b) more sensitivity analysis. Differences reflect what would happen under alternative assumptions. In this situation, the main difference is the pattern of electricity demand growth rates, which change in the production forecasts from those presented in the draft supplemental EIS.
- 26-43 See response to comment 26-42
- 26-44 These inconsistencies have been eliminated in the final supplemental EIS.
- 26-45 This comment is correct. Corrections were made and used in the discussion in the draft supplemental EIS but were not placed in this table. Table 3-8 in the final supplemental EIS has been revised.
- 26-46 See response to comment 26-45.
- 26-47 This quote is taken out of context. The 1979 forecasts compared well with respect to the national figures. The draft supplemental EIS then goes on to discuss the greater regional differences. As far as the federal coal regions are concerned, the low forecasts were close to current expectations for 1985 and 1990 except in the Green River-Hams Fork Region, where forecasts were much too high. Forecasts for most of the other regions were actually a little low.
- 26-48 The 1979 low forecasted total production for 1985 deviates by only 10 percent from the current estimate of 1985 production, an acceptable error considering the drastic swings in the energy markets and the severe global recession. Relative to current forecasts, the 1990 estimate looks reasonable.
- 26-49 As noted in the Production Forecast Technical Report and the draft supplemental EIS, the Data Resources, Inc. (DRI) forecast in the technical report is an updated forecast (winter 1985) of that in the draft supplemental EIS (fall 1984). The Department of the Interior forecasts in the technical report represent both some updates of data as well as alternative assumptions from the

forecasts in the draft supplemental EIS. Although forecasted production decreased between the draft supplemental EIS and the technical report, DOE/EIA's 1984 Annual Energy Outlook (AEO) forecasts were slightly higher than their corresponding 1983 AEO forecasts. Both of the DRI national forecasts and both of the DOE national forecasts were within the range of Department of the Interior's low to high forecasts for both the draft supplemental EIS and the technical report.

Some of the regional differences are due to alternative assumptions on the pattern of electricity demand growth rates. The final supplemental EIS forecasts use combinations of alternative assumptions and data inputs that appear most reasonable at the time. As to the need for leasing, DRI forecasts reveal an even lower need in Green River-Hams Fork and San Juan River regions than the Department of the Interior forecasts. But the DRI forecasts reveal a greater need for more leasing in the Powder River Region than the Department of the Interior medium forecasts. Additionally, the DRI forecasts do not reveal possible shifts in production if capacity is restricted in the Powder River Region. Department of the Interior forecasts reveal that both the Green River-Hams Fork and San Juan River Regions would increase production under No New Federal Leasing. Thus, although current expectations may indicate little need for leasing in these two regions other than bypass and maintenance leases, the greater opportunity for evaluating future impacts of actions on outstanding PRLAs, Clean Air Act changes, and relinquishments due to MLA sections 2(a)(2)(A) and 7 would exist under the Proposed Action. The supplemental EIS analysis uses existing information.

There is an error in the draft supplemental EIS. The title is incorrect; it should be the 1983 AEO. But the published date (1984) is correct in both the text and the table. The 1984 Annual Energy Outlook results are in the Production Forecast Technical Report (BLM 1985b) and are higher than the 1983 Annual Energy Outlook. The 1984 results are included in this final supplemental EIS.

Data from the 1983 Annual Energy Outlook (AEO) was used to make the more detailed regional comparisons. Supporting data from the 1984 AEO was not available, as shown in the table of DOE/EIA forecasts in the Production Forecast Technical Report (BLM 1985b).



27

The Rio Grande Chapter of the Sierra Club

May 8, 1985

Mr. Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
555 Zang Street, First Floor East
Denver, Colorado 80228

HAND DELIVERED

Dear Mr. Edwards:

Enclosed are joint comments on the Review of the Unsuitability Criteria in Federal Coal Leasing, March 1985 and on the draft Federal Coal Management Program Supplemental Environmental Impact Statement, February 1985 submitted on behalf of the Rio Grande Chapter of the Sierra Club, the Committee on Coal and Southwest Research and Information Center. We wish to thank you for this opportunity to comment upon these two documents and for extending the comment deadline from April 9th to May 9th.

We feel that the Supplemental EIS suffers from several notable flaws and should be corrected in a second draft before issuing a final document. The Supplemental EIS lacks a clear set of alternatives for a Federal Coal Management Program; moreover, it does not meaningfully address the impacts of its various alternatives due primarily to its failure to address the issue of actual leasing levels proposed by the Department. The Supplement does not demonstrate the need for additional leasing. Major elements of the coal program have either already been adopted or are not presented in meaningful detail and in both cases are inadequately analyzed in the document. Serious default assumptions such as those regarding the effectiveness of reclamation efforts and the implementation of surface mining regulatory programs are made in the document that render its conclusions invalid.

We wish to incorporate by reference the previous comments submitted on behalf of the Committee on Coal, the Sierra Club and Southwest Research and Information Center regarding the San Juan River Regional Coal Leasing EIS, the San Juan Basin Cumulative Overview, and the draft Planning Guidelines. We also here incorporate by reference the comments submitted by Environmental Defense Fund and the Navajo Nation on the present documents.

In regard to the coal management program expressed in the Review and the draft SEIS, we recommend that BLM take the following actions:

1. Strengthen the criteria as recommended here and apply them during the preparation of Resource Management Plans; budget sufficient resources to gather adequate data on non-coal resources likely to be affected by coal development, in order to achieve more detailed, site-specific environmental analysis of these lands for suitability and ranking prior to lease sale planning.

2. Withdraw from further consideration for leasing any lands for which an RMP has not been prepared, including tracts delineated for the following proposed lease sales: San Juan River Rounds I and II, Powder River Round II, Green River-Hams Fork Round II, Southern Appalachian Round II, Fort Union II, and Uinta-Southwestern Utah Round II.

3. Relax its schedules for the preparation of coal lease sales in order to allow sufficient time for thorough resource inventory, environmental analysis and application of the four planning screens.

4. Greatly decrease competitive leasing levels based on a definite, rational production/demand formula such as that in the 1979 regulations; renounce the policy of leasing to meet industry demand for reserves in favor of a policy of leasing to meet demand for production.

5. Conduct a thorough and uniform review of the processing of preference right lease applications, including the validity of the prospecting permits, and perform rigorous economic and environmental analyses on these applications in accordance with the terms of the Berklund decision; conduct exchanges or petition Congress for compensation to successful applicants on lands that are environmentally sensitive.

6. Restore the public participation provisions of the 1979 Program and provide for balanced voting membership on RCIs, including Indian tribes.

7. Establish provisions for firm and prompt enforcement of due diligence requirements on existing federal leases.

8. Establish reclamation as an unsuitability criterion and provide for scientific assessment of reclamation potential, along the lines of the ERIA studies, prior to leasing.

9. Extend full surface owner consultation and consent rights to fee owners, individual allottees and occupants, including Indian tribes, for whom the federal government holds the land in trust.

10. Assess within each region the effect of coal development on water supplies, including the degradation and depletion of groundwater reserves, and plan for coal development only to the extent that demonstrated, unappropriated water supplies permit.

11. Assess the impact of coal exchanges as part of the Federal Coal Management Program and conduct exchanges only in the context of unsuitability analysis and land use planning.

12. Codify the Federal Coal Management Program in the Federal Regulations rather than in guidance, instruction memoranda, staff handbooks, etc., in order to provide clear visibility of the program's structure, policy and operation and accountability in its implementation.

We wish to thank you again for this opportunity to comment on these documents.

Very truly yours,

Jonathan M. Teague

Jonathan M. Teague
Rio Grande Chapter, Sierra Club

Mini Lopez

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Committee on Coal

Mr. Paul Robinson
Mr. Paul Robinson
Southwest Research and Information Center



SOUTHWEST RESEARCH AND INFORMATION CENTER

COMMENTS ON BEHALF OF
SOUTHWEST RESEARCH AND INFORMATION CENTER
THE RIO GRANDE CHAPTER OF THE SIERRA CLUB
THE COMMITTEE ON COAL

Regarding

FEDERAL COAL MANAGEMENT PROGRAM Draft ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENT

FEBRUARY 1985
U.S. Department of the Interior
Bureau of Land Management

Submitted April 9, 1985

Prepared by Jonathan Teague
under contract to
Southwest Research and Information Center

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CONSULTATION AND COORDINATION

The following represents our comments upon the various elements of the Draft SEIS, generally in the order in which they occur in that document.

Purpose and Need for the Proposed Action: Continuation of Federal Leasing

DOI should be aware that the present inventory of leased reserves is considerably expanded since the initiation of the present program in 1979; lease sales alone since 1981 alone have added some 2.6 billion tons to this inventory. DOI fails to provide any justification in terms of public need for additional coal production for the proposed action even as it demonstrates that continued leasing will not result in additional production of coal.

The regulations issued by the Council on Environmental Quality governing NEPA application specify that this section of an EIS should

... present: the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. In this section the agencies shall:

(a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.

(b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.

(c) Include reasonable alternatives not within the jurisdiction of the lead agency.

(d) Include the alternative of no action. [40 CFR 1502.14 (a), (b), (c)]

BLM has not complied with these regulations. It does not offer a clear analysis of the need to continue the program or a convincing justification of why BLM seeks this. It does not address alternatives to expanded coal production in order to meet future energy demands, such as conservation, renewable energy sources such as wind power, photovoltaic electricity, or biomass. Instead BLM unreasonably limits its scope to limited choices as to how to continue federal coal leasing.

The programmatic level of NEPA analysis is the broadest level of study and is the point at which alternatives to coal use in meeting energy needs should be considered. There is no opportunity for this consideration at subsequent stages in the analysis of the Federal coal program. The absence of real alternatives in the SEIS is a major flaw.

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- 27-5 com assortment of alternative programs should be included in the SEIS. This was the format followed in the original 1979 Programmatic EIS, to which this is a supplement, and DOI would do well to follow it.
- 27-6 DOI's proposals to publish guidelines and develop procedures on such items as intertract bidding, setting of "minimum admissible bids", public participation, etc., while commendable in themselves, are insufficient to provide any insight as to how the program will be operated. This is true as well of DOI's statements of intent to seek comments on comparable sales adjustments, estimates of tract value, reporting of data on lease assignments, etc. These proposals to seek input at a later date defeat the purpose of the present programmatic review in the SEIS. Such input should be sought within the context of the present SEIS.
- 27-6a In particular, DOI should clearly specify what procedures for public involvement beyond simply providing "opportunities for comment" it intends to adopt. This is critical, in view of the large authority to be vested in the Regional Coal Teams and their apparent lack of public accountability otherwise. DOI should specify, for instance, whether the PRA Monthly Reports will be made available to the public as a matter of course. In the past, access to information from the RCTs has been inconvenient and at individual expense to interested members of the public.
- DOI should also commit itself to redoing coal activity planning that was undertaken under the guise of Management Framework Plans: Resource Management Plans should be prepared for all areas where coal lease sales are now pending, such as the San Juan River Region. Planned lease sales for such regions, prepared under the inadequate WTPs, should be dropped. The BLM should coordinate its planning with that of the U.S. Forest Service and other agencies to ensure that BLM coal activity planning does not undermine the program goals of these other agencies.
- Data adequacy guidelines should be spelled out in the regulations. Additionally, the RCTs should not be asked to consider for leasing tracts on which insufficient information is available to, for example, apply all of the unsuitability criteria, formulate definite lease stipulations, or evaluate the coal resource for purposes of setting fair market value.
- We are concerned that many of DOI's proposals are non-responsive to the recommendations made by OTA, Linowes, and the public. For instance, DOI does not offer any hint of how it intends to respond to OTA Recommendation 10, regarding the establishment of uniform procedures for environmental evaluation for PRAAs. This is a major programmatic issue, certainly of concern to citizens in New Mexico, where much of the leaseable federal coal is under PRAAs.
- 27-7 We note that Linowes Recommendation V-4 is missing from Table 1-5, regarding experimentation with a variety of coal lease auction techniques. Although generally accurate, some of the summaries of the recommendations in Tables 1-5 and 1-6 are incomplete in significant ways. For example, on page 24 Linowes Recommendation VII-4 should read
- 27-8 Congress should consider giving the Secretary authority to lower royalty rates before a coal lease sale where royalties have adverse effect on the production of the resource. [addition underlined]

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Chapter 1 Introduction: History and Background

- 27-3 DOI would do well to include in this section the various Congressional actions in revising the statutory framework of the coal program, including the passage of the Federal Coal Leasing Amendments Act, the Federal Land Policy and Management Act, and the Surface Mining Control and Reclamation Act.
- In summarizing the need for this SEIS, DOI should recognize that it was the substantial program modifications adopted in 1982 and 1983 that spurred much of the public and Congressional criticism, including the reviews of the program by the Office of Technology Assessment (OTA) and the Commission on Fair Market Value for Federal Coal Leasing ("Linowes"). Interior's statements to the contrary notwithstanding, it is clear that this widespread criticism and the apparent malfunctions of the program demanded a programmatic reevaluation. This draft SEIS unfortunately does not well fill that function.

Exchanges

Coal exchanges, both fee and lease, necessarily have major impacts on federal coal management, since they greatly influence the location, timing and pace of coal development on federal and adjacent nonfederal lands. The SEIS lists some 12 major exchanges involving coal (Table 1-4); listing the total tonnages of coal involved would have provided some sense of the potential impacts of exchanges. DOI should present its policies and guidelines for the conduct of such exchanges, when they are to be initiated, how they are to be evaluated for economic and environmental impact, and what decision criteria are used in approving them. DOI was abjured both by the Linowes Commission and by OTA to examine this aspect of federal coal management, and the SEIS is seriously deficient as a decision document and programmatic review in its omission of an in depth discussion of this issue.

We direct BLM's attention to comments in this regard submitted by Patrick Sweeney on behalf of the Western Organization of Resource Councils in connection with the SEIS.

Revisions to the Current Program

In regard to the program criticisms leveled by OTA and Linowes, and DOI's proposed responses (Tables 1-5 and 1-6), DOI should greatly expand its treatment of the recommended changes. The tables are quite summary in nature and, although useful, they are wholly insufficient without a detailed treatment of these program elements, an accurate assessment of impacts, even at a programmatic level, is impossible. The public has no concrete idea from this document what the future form of the program may be. These program revisions are at the core of a programmatic EIS and are of critical interest to the public. The elements of the program that they list are of major significance in the design and operation of the Federal Coal Management Program. Detailed explanations of the proposals, how DOI proposes to implement them, what possible alternative proposals may exist to meet the criticisms, and what the impacts of these program elements in a reasonable

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27-9) Similarly, an example from Table 1-6 would be regarding OTA recommendation 4, which specifies the completion of Resource Management Plans, rather than just "comprehensive area planning" (page 25). Other examples could be cited, but instead we suggest that the recommendations be stated in full as summarized in the respective reports, lest serious misunderstanding result.

27-9a) We note here that we do not concur with the Department's finding of No Significant Impact on the changes in the program regulations undertaken by DOI in response to OTA and findings. We also take issue with the Department's decision not to perform further environmental analysis on the Preference Right Lease Applications in the San Juan Basin of New Mexico. We refer the Department to our previous comments submitted on the San Juan Region PRLA EIS and the various drafts of the San Juan River Regional Coal Leasing Environmental Impact Statement, and we incorporate those comments by reference here. Serious deficiencies in the assessment of impacts on water, cultural resources, reclamation, and the region's residents have been pointed out to BLM, and DOI's refusal to correct the flaws in these documents is inexcusable.

DOI claims that the changes in the regulations pursuant to FLMMA, SMCRA, and FLPMA were undertaken by DOI in 1981-82 in order to

- (1) eliminate excessive, burdensome, and counterproductive regulations, procedures and policies; (2) promote a "good neighbor" policy in which participation by state governments is encouraged; and (3) to develop publicly owned resources in a manner that is both environmentally sound and responsive to market demands. (SEIS page 28)

The changes to the federal regulations have in fact achieved none of these aims. For example, changes to the regulations pursuant to SMCRA have now thrown programs for surface mining regulation into utter confusion, with states such as New Mexico stating on the record that they are unable to continue permitting of mines because of uncertainty regarding the status of OSM's regulations as well as their own. States such as New Mexico and municipalities in Utah have viewed with alarm revisions that threaten municipal watersheds and archeological resources. For example, DOI's invitation to states to participate in coal activity planning is cynical at best, since in most cases the states do not possess the financial resources to "participate" in the gathering of resources information that is properly BLM's responsibility or the authority to limit DOI's coal leasing targets.

27-10) We note that, in contradiction to the statement of the SEIS that "legal issuance [of PRLAs] is not discretionary" (page 28), the Secretary has wide discretion to seek exchange, impose protective stipulations including designating certain areas unsuitable for mining, or condemn areas under application and seek compensation from Congress. These issues are settled law; see *NDOC v. Berkland, et al.* (609 F.2d 533).

Specific Rule Changes: 1982-83

27-10a) We take issue with DOI's revision to the rules governing emergency leasing. The BLM's attempt in 1984 to issue a lease to Perma Resources for

27-10b) land containing the Chimney Rock Archeological Protection Site is but one example of the environmental mayhem that could result from this revision. In effect, DOI has removed the "emergency" concept from the provisions for granting these leases. The original 1979 provisions should be reinstated.

27-10b) We also disagree with DOI's alteration of appeal provisions for surface owners: this change is a limitation on due process to which surface owners are entitled and should be revoked.

DOI's discarding of the coal development potential screen seriously undermined land use planning efforts and weakened the associated environmental analysis efforts by BLM. For example, the urgent preparation of remedial archeological inventories in the San Juan Region in 1983, the results of which have still not been published for review, was one result of this revision.

27-10c) The uniform conclusions of these surveys, rejecting the need for in situ preservation of sites, cast doubt upon the validity of their recommendations and marks them as an attempt to patch up weak NEPA analysis by competent but over-worked BLM staff. We support DOI's intention to reinstate this screen and recommend that land use plans affected by the 1982 change be redone.

Federal and State Constraints

27-11) We note here that Table 1-8 does not list SMCRA, FLMMA or FLPMA and that laws governing the rights of Indian allottees, the Navajo-Hopi Relocation Act and its amendments, and other laws that bear directly upon Interior's plans for coal development. Aside from AIFRA, laws governing trust responsibilities to Native Americans are not discussed in this section -- a serious omission.

Chapter 2 Description of the Proposed Action and Alternatives

27-12) This section seems to seek rationalization for DOI's present program rather than the exploration of genuine alternatives. Notably lacking is any discussion of energy conservation or alternative means of meeting energy demands now directed towards coal.

DOI raises a number of spurious arguments in an effort to lend credence to its proposal to resume largescale federal coal leasing. It does not assess to what extent federal coal leasing drives the development of nonfederal coal, but assumes (page 57) that such coal would be developed inefficiently absent federal lease sales. This contradicts past and present experience in development patterns on checkerboard coal lands. DOI also invokes the dangers of bypassing of federal coal holdings unless competitive leasing resumes: this ignores the existing program provisions for bypass and emergency leasing and the option to include these in future coal programs in lieu of a resumption of wholesale leasing.

27-13) DOI correctly notes that pre-1971 leases were issued without regard for land use planning and environmental constraints, and that shifting production from some of these leases to others would "foster economically and environmentally improved development patterns" (page 58). DOI errs, however, in supposing that simply continuing to flood the market with coal leases will achieve these ends, since this supplies no incentive towards environmental

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market necessarily results in the elimination of marginal firms, reducing the field of producers. DOI reflects bias in its view that the federal government may induce market distortions by underleasing while it ignores the economic impacts of overleasing.

DOI's reliance on the issue of national security in the face of interruption of imported oil supplies is likewise unconvincing. The "management flexibility" that would be needed under such conditions is already available and constraints on rapid replacement of oil by coal do not subsist primarily in the leasing program but rather in patterns of economic development, capital infrastructure and dependence on energy in the form of liquid fuels. The alleged benefits of job stability would in fact be threatened, according to DOI's production forecasts, since production would shift among regions: BLM presently has the authority to issue emergency leases and the exercise of prudent management on the part of coal producers would readily eliminate the need to curtail operations because of the depletion of reserves absent federal leasing.

Treatment of the Proposed Action and Alternatives

DOI wrongly contends that the level of coal leasing is an "question of policy related to implementing a specific program component, not a separate program design alternative" (page 64). DOI further states that the Leasing for Need alternative differs so little from the Proposed Action that it does not warrant separate treatment in the SEIS. We find this assertion incredible. In the first place it is difficult to judge the degree of similarity in the framework for planning between the two proposals because the specific elements of alternative coal programs are not clearly presented in the SEIS.

Second, we find it difficult to credit a programmatic analysis that does not provide some indication of the levels of leasing proposed. Nowhere in the SEIS does DOI offer any indication of the amounts of coal likely to be leased under its proposed action or the subalternatives (leasing by application or preference right and emergency leasing). Thus it is not surprising that DOI cannot elsewhere in the SEIS provide more than a conceptual analysis of potential impacts from the operation of the coal program.

We strongly disagree with DOI's view that a Leasing for Need alternative would overly limit administrative discretion: DOI has provided no evidence to support this bald assertion. DOI should analyze at least the proposals listed on page 63 that received scrutiny in the 1979 Programmatic EIS, including a Leasing for Need Alternative. The rationale provided by DOI for dismissing the various alternatives from further consideration is unconvincing and inconsistent with its obligation under 40 CFR 1502.14(a) to provide reasons for such dismissal.

DOI claims that the level of environmental impact under the various alternatives actually treated in the SEIS will not vary significantly, since "the level of federal coal leasing will not substantially affect rates of production of federal coal. While we concur in the conclusion that additional coal production will not be forthcoming from additional federal leasing, we are astounded at DOI's duplicity in refusing to consider the simple fact that

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protection. Economic constraints do not by themselves dictate environmentally sound patterns of development; under a free market economy it lies with government as regulator to ensure that this occurs.

Moreover, it is cynical of DOI to put forth these assertions at a time when it has or is weakening the federal regulations governing diligent development of federal coal leases, seriously weakening the powers of the federal government to regain control over leases that were originally let without regard to land use or environmental protection. As we have stated in our previous comments on this document, DOI should address the issue of due diligence in this programmatic review of federal coal management, since it is a major tool in managing public resources.

DOI asserts without supporting evidence that absent additional federal leasing, coal prices will increase significantly, thereby injuring the interests of consumers. This is a surprising concern for DOI, given the Administration's positions on gas and oil price decontrol. In any event, the argument is unconvincing: there are minimal effects of coal prices on the cost of its end product, electricity supplied to consumers; we direct BLM's attention to previous comments on this issue by Dave Marcus of the Environmental Defense Fund, contained in EDF's comments on the 1983 San Juan River Regional Coal Leasing EIS.

DOI also seems in its analysis of need to assume that the private sector lacks any substantial capability to meet demand growth and that the federal government must be prepared to satisfy all of this demand. Adequate analysis of non-federal coal production capacity is lacking in the EIS, and the supporting Co. Production Forecast Technical Report does not remedy this lack.

DOI does not deal with the problem of conducting meaningful land use planning, as required by law, in a situation where overleasing of coal precludes controlling the timing and location of new coal development. This is one of the major flaws in the policy expressed in DOI's proposed action and is grounds for summarily rejecting it.

DOI must distinguish between the types of competition in the coal industry that are of concern; these include competition between producers seeking to obtain coal reserves and competition between producers in meeting consumer demands for produced coal. DOI presumes without supporting evidence indeed in the face of available evidence -- that continuation of major federal leasing will improve competition in the coal industry. We merely observe that for almost all tracts leased since 1981, only one bid was submitted. Further, to meaningfully assert that leasing will create competition in supplying coal to consumers, DOI must examine the structure of the coal industry; this has not been done in the SEIS or (apparently) in any of the references cited.

In fact, one may reasonably argue that DOI's policy of massive federal leasing has in effect decreased competition in coal production, since small producers, especially in the eastern United States, are harmed by what amounts to a major federal subsidy to eastern producers in the leasing of coal at bargain rates. Companies that must acquire their reserves in the private sector cannot compete equally with firms that are able to rely on a virtually unlimited supply of low-priced federal coal. The resultant depressed coal

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Procedures for the "Proposed" Action Program

DOI does not discuss in the SIS the changes made in the application of its definition of "qualified surface owner", despite the fact that this has been a significant element of controversy in the program. DOI should specify what procedures it has adopted or intends to adopt in this regard. The current regulations, adopted in 1982, that moved surface owner consultation to the activity planning stage should be revised: in the interests of fairness and efficiency, this consultation should occur during land use planning and results of consultations should be effective throughout the life of the plan. DOI's present procedures have had the effect of exerting undue pressure on surface owners to consent to mining as well as wasting public funds in inefficient planning activity on lands that should be screened out early in the process.

DOI should likewise include in the draft SEIS its proposed regulations for the assessment of threshold impacts in coal activity planning. DOI has in the past noted its confusion over the application of this concept in the operation of the program. Reinstatement of the threshold impact criteria in the program was one of OTA's recommendations and is most appropriately treated in the SEIS. It is essential for the assessment of cumulative impacts such as the loss of archeological resources over a coal region, depletion or pollution of water resources, and socio-economic impacts.

DOI presents a number of post hoc program proposals, many concerning the function and structure of the Regional Coal Teams: these should be analyzed in the SEIS. It is unclear, given DOI's refusal to address the root problems of insufficient time and resources for data gathering, resource inventory and sound land planning, how the proposals for RCT working groups and "science advisors" will remedy the flaws in the program that result from basic ignorance of the resource base.

Among the other post hoc program proposals mentioned in the SEIS are the provisions for "market demand analysis". Inasmuch as these analyses will be used to drive RCT leasing decisions, public review and comment should be actively solicited on their preparation and contents. We note, however, that these analyses are not tied to a definite procedure for determining leasing levels and that again the public is left without clear standards by which to judge RCT decisions on leasing.

The "certain objectives" which are to govern setting of leasing targets merit closer scrutiny in the body of the SEIS. DOI asserts that meeting energy needs is one of these objectives, yet according to the production analysis in the SEIS, this objective has already been met, since even the resumption of major federal leasing will not affect production levels: i.e. foreseeable demand for production of federal coal has been saturated. DOI also asserts that "market stability" is an objective to be considered in setting targets. We must observe that DOI's policies since 1981 have produced a saturated, depressed market which has resulted in mine closures, layoffs, and substantial idle production capacity, all at great cost to the individual communities affected. We submit that DOI's proposed policies amount to a continuation of these conditions and do not contribute to the "industry stability" which should be the goal of "market stability".

We approve of DOI's proposal to initiate new coal activity planning only for regions where RMA have been prepared; however, it is crucial that lease sales, such as the San Juan Region Round 17, for which activity planning was conducted without the benefit of RMA, be suspended. Despite its statement of

the ultimate extent of mining depends greatly upon federal leasing and that accordingly the geographic extent of impacts from mining will vary tremendously, depending upon the amount of coal leased. This flaw alone warrants the summary retraction of the SEIS and the preparation of a new draft.

Leaving aside DOI's claims about the success of reclamation and the perfect efficacy of surface mine regulation and enforcement, the mining of coal necessarily entails irretrievable and irreversible impacts and environmental consequences that cannot be avoided or mitigated. Regardless of its timing of pace, every regional leasing EIS notes that this is the case; thus, it is utterly irresponsible of DOI to blandly assume that the level of impact is independent of the level of leasing. Accordingly, DOI should appraise as precisely as possible the quantities of coal likely to be leased under each alternative and the areas of land likely to be affected within each region, using this information as a starting point for a true environmental impact analysis.

This assumption on DOI's part may explain its failure to adequately distinguish between the features of the alternatives discussed in the 1979 EIS. The level of leasing in the program, in the context of the statutes that govern its conduct, is one of the most important decisions regarding the program: how these levels are set and who sets them — whether it be the states, the RCTs, DOI or DOE — are of intense interest to the public and should receive extensive treatment in the SEIS.

Along this line, we find unacceptable DOI's proposal for the treatment of leasing levels, as presented in Appendix 6. The procedures presented, including the various "algorithms", allow for wholly arbitrary selection of leasing targets and offer no clue as to what the public may expect regarding levels of leasing. In particular, we object to the inclusion of formulas based on industry expressions of interest and "strategic supply". These two formulas amount to the establishment of an industry-directed program, a concept which was rejected by Congress in the passage of FCLAA. FCLAA states that land use planning is to occur prior to leasing, with the intent that multiple use planning decisions shall take precedence over coal leasing considerations; what DOI proposes is in effect a return to the policy of allocating leasing decisions to dictate land use planning.

We are also concerned that several of the algorithms, especially the "Past Sales" version, rely for inputs upon proprietary data: this means that the operation and use of the algorithms will take place outside of public scrutiny, exacerbating the already arbitrary nature of the leasing level determinations.

DOI has argued that revisions to procedures, such as those discussed in its references BLM 1982d, 1983j, 1984a and 1985a, are not significant and do not merit environmental impact statements; we feel that these revisions are in fact substantive in nature and should be analysed in the SEIS. DOI should be reminded that these revisions are currently the subject of substantial controversy. DOI relies on the assumption that procedures will not be substantially altered among the various alternatives in the SEIS, which distinguishes primarily in terms of leasing levels, to limit its discussion of procedural alternatives.

In view of DOI's position on the issues of leasing and program procedures, it is unclear why the SEIS was performed at all. DOI does not present a reasonable array of alternatives, offering only the choices of no program at all, business as usual before the 1983 Congressional moratorium, or an industry-driven lease by application/PRLA issuance program.

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policy on RMPs preceding activity planning, DOI is conspicuously silent in this regard. What does the Department propose to do regarding presently planned lease sales? According to the recommendations contained in the "Issues Paper", included as part of Appendix 6, page 395 et. seq., Interior may proceed with this sale. Yet DOI acknowledges that the need for competitive leasing in the San Juan Region will be determined by the results of PRLA processing, itself apparently to be completed separately and subsequently to the lease sale. We note that, should these sales proceed as planned, the issue of what form the coal program should then take will be largely moot.

DOI's present rules allowing state governors to propose lease stipulations, while admirable in intent, are hollow in practice. Typically the states do not have the resources to conduct the resource inventories on public lands that would be required for meaningful site-specific stipulations. BLM's failure to conduct these inventories leaves little basis for proposing such stipulations. Moreover, DOI is under no compulsion to accept state-proposed stipulations, leaving this provision in the regulations as little more than a gesture.

In regard to DOI's proposals for "cooperative leasing", its failure to consider the programmatic effects of coal exchanges as well as its ill-considered policy of encouraging these exchanges seriously undermines this element of the program by removing any incentive for private coal holders to participate. We refer DOI to comments submitted by the Western Organization of Resource Councils on the SEIS in this regard. DOI's systematic failure to adopt a truly programmatic approach in reviewing and revising the Federal Coal Management Program must inevitably result in such internal contradictions between program elements.

Recommendations Regarding PRLA Processing

DOI erroneously implies (page 80) that it intends to prepare additional site-specific environmental analyses for PRLAs in the San Juan Region, when in fact it has specifically refused to do so. We also note that the BLM comment in this regard is contingent upon a legal settlement still in process of negotiation and may not be relied upon by the public. We welcome DOI's commitment to perform such analyses, including the San Juan PRLAs. It should be noted as well that the SEIS PRLAs were not well addressed in the 1981 San Juan-Chaco MFP update for Coal. BLM wrongly assumed in all of its decisions that it had no discretion to plan for PRLA lands and hence did not do so.

We would like to make the following specific recommendations to DOI regarding the handling of PRLAs:

1. BLM should undertake a review of the information available to the U.S. Geological Survey for each coal region at the time when the prospecting permits for the pending PRLAs were issued. This review should identify the areas where the existence of workable coal could properly have been inferred from existing information. Any PRLAs located in such areas should be invalidated by BLM.

2. BLM should revise its procedures governing prior claims and return to the procedures in effect as of 1980, which more properly implemented the intent of the Mineral Lands Leasing Act. In addition, BLM personnel should conduct site examinations of all PRLAs to determine the full extent of any abandoned mines and coal outcroppings.

3. Specific guidance should require the conduct of environmental assessments solely to determine whether or not potential significant impacts

could occur from the development of the PRLA in question. The analysis of mitigation measures should be conducted after this initial determination is made, within an EIS.

4. Where development of a PRLA may significantly impact the environment, BLM should conduct a complete EIS. This EIS should meet all applicable criteria of CEQ regulations and should analyze mitigation measures and proposed stipulations. All options open to the Secretary, including exchange and condemnation, should be examined.

5. Whether or not an EIS is conducted, the BLM should perform a complete analysis of mitigating measures, defining the measures required, evaluating their effectiveness in protecting the environment and valuable non-coal resources, and estimating the cost of compliance with those measures that are required.

6. In all cases the BLM should fully define the areas that are to be excluded from mining, not leaving this definition until later stages. Such a complete definition of areas excluded from mining is essential for the proper application of the commercial quantities test.

7. BLM should incorporate all extrinsic costs into the commercial quantities tests, including such costs as surface owner consent, relocation expenses for surface occupants, and the costs of providing support services such as transportation to the potential mine site.

8. BLM should establish specific standards for public comment and review of environmental analysis, the analysis of mitigating measures, and the supporting documents for the commercial quantities determination.

Regarding DOI's "with-and-without" approach to environmental analysis, we wish to note that the adoption of this methodology obscures for the decision maker the potential impacts of a proposed action and by itself is inadequate. This approach allows for the obscuring of actual impacts of an action by inflating the projection of "baseline" impacts and should be rejected or at least supplemented by an evaluation of impacts under present rather than predicted future conditions. There does not seem to be any foundation for this approach in the governing CEQ regulations, and the "with-and-without" methodology also seems to violate NEPA's injunction to perform worst-case analyses. See 40 CFR 1502.22 (b).

Description of the Environment and Environmental Consequences

In general, DOI should assume that all coal leased will be mined, within the limitations of due diligence requirements. It is unreasonable to assume, as does the Department, that lessors will acquire Federal leases without the firm intention of bringing them into production or otherwise retaining them: repositioning under the diligence provisions of the leases should not be relied upon to mitigate environmental impacts associated with leasing.

DOI should assess the impacts of its continued leasing proposal on effective land use planning, since this constitutes a surrender of the ability to control when and where coal is developed. That the SEIS does not "involve analyses of leasing specific amounts of coal" (page 121) constitutes one of its major flaws; see our comments above on this issue.

In regard to the issue of reclamation and DOI's faulty treatment of it in the SEIS, we refer you to comments submitted by Paul Robinson for comment

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Southwest Research and Information Center at the March 20th hearing on the SEIS. He do not restate these comments here but incorporate them by reference.

In assessing regional and national impacts, we suggest that rather than rely solely upon regional multipliers, DOI should examine the SEIS on leasing prepared to date and draw upon them to sum up and generalize about program impacts. This would have the benefit of being less theoretical, offering some insight into the actual conditions within each region.

Socio-economics

DOI fails to mention the Navajo Agricultural Products Industries associated with the Navajo Indian Irrigation Project. This project is one of the major economic activities in the San Juan Basin, with a total potential for over 110,000 acres of irrigated farmland. DOI also fails to note the widespread surface owner and occupant opposition to proposed federal coal leasing and related projects in the Eastern Navajo Agency of the San Juan Basin. Testimony at public hearings, resolutions by area Navajo Chapters and other expressions of residents' sentiments against leasing have been unwavering. DOI should take heed and instruct BLM to screen out from further consideration for leasing those areas where residents have opposed it.

DOI mentions that local communities are plagued by the problem of uncertainty as to when and where coal production will occur. DOI's leasing policies have contributed substantially to this situation and, as proposed, will continue to do so. DOI should, in accordance with NEPA, analyze the means available to it to remedy this problem, including the reduction of leasing levels.

DOI should address fully the problem of long-term change in the nature of rural economies in coal regions caused by coal development. These changes include the permanent disruption of more stable, agriculturally based economies and their displacement by strongly cyclical mining economies. Local communities may be forced to invest heavily in infrastructure to accommodate "boom" conditions and then forced to carry these capital investments on a reduced tax base when the boom either collapses or fails to materialize. Ample information on these sorts of problems is available in recent accounts of the collapse in oil shale development in western Colorado.

As part of its program, DOI should propose means for coping with these kinds of socio-economic impacts, which are readily anticipated indirect consequences of its proposed action. In particular, the SEIS itself points out the cyclical and regional shifts in production that may occur under the proposed program. In addition to the benefits of coal development, the SEIS should also address the costs to communities faced with the loss of coal production to other mining areas. This issue is of particular concern to New Mexico since it is faced with a projected loss of employment as a result of the proposed action.

DOI should be able to project probable increases in accident rates, etc. as a result of increased highway traffic resulting from additional coal development. The SEIS does not present any information on increased coal hauling on New Mexico highways or on the costs to the state or counties of increased road repair and construction costs. Costs associated with the increases or shifts in population associated with the various alternatives should at least be roughly estimated; these costs include the provision of basic services such as education and police and fire protection, etc.

Fugitive dust emissions from coal surface mines remains a serious problem in coal development; DOI needs to better assess the impacts of dust pollution on regional visibility and air quality standards before leasing coal in areas that could experience significant degradation. According to a report prepared by PDDCO Environmental Consultants entitled Characterization of PM-10 and TSP Air Quality Around Western Surface Coal Mines (1982, EPA-430/4-a3-004), between one-third and two-thirds of the estimated TSP concentrations arising from surface mines lie within the fine particulates range (PM-10), which is most dangerous to health and visibility. Moreover, the amount of TSP generated by even a relatively small mine of less than 4 million tons/year production can be substantial, causing violations of Class II increments for TSP.

DOI should propose mitigation measures in the SEIS to deal with what is clearly a generic problem for western surface mines: the problem of fugitive dust emissions. These measures include paving of haul roads, use of conveyor systems rather than haul roads, use of wind breakers, rapid revegetation of disturbed areas, etc. We attach for DOI's reference a copy of comments on behalf of the Sierra Club regarding the listing of coal surface mines as major sources of fugitive dust emissions (Exhibit "A"). Air pollution control measures should be written into leases as part of DOI's responsibility for environmental protection in the coal program. The discussion of the new TSP regulations proposed by the Federal Environmental Protection Agency needs to be expanded to deal with the issue of mitigation.

Similarly DOI should address the issue of air pollution from continued and increased coal combustion and conversion as a reasonably foreseeable consequence of continued leasing. See 40 CFR 1502.16; 40 CFR 1508.8. Contributions to regional air pollution by proposed new coal-fired generating stations should be estimated, as well as other related sources; DOI could combine a national market study with a potential pollution inventory of proposed coal use projects such as powerplants as one approach to this analysis.

We do not find any appraisal by DOI of large-scale air pollution impacts resulting from continued or increased coal use; such an appraisal should address not just the rates of use of coal but also the consequence of the combustion of other use of the various (approximate) total amounts of coal to be leased under the different alternatives. The type of impacts that should properly be studied in the SEIS are atmospheric acid deposition and potential for climate changes as a result of carbon dioxide-induced global warming. This omission persists in DOI's analysis despite the publicity accorded such documents as the National Academy of Sciences Report entitled *Atmospheric Acid Precipitation Interactions* (1981) and *Changing Climate* (1983), the EPA report *Can We Delay a Greenhouse Warming* (1983), and the DOE/Department of State *Global Warming Report* (1982). These reports all address global environmental problems directly tied to the combustion of coal and other fossil fuels; DOI is potentially committing the nation to a major extension of its reliance upon coal as a medium term energy supply by virtue of its proposed leasing program, without examining program-level energy alternatives.

In regard to Native American issues and socio-economic impacts, there is at present a substantial body of information on the effects of relocation of Native Americans that has arisen as a result of attempts at resettlement from the Navajo-Hopi former Joint Use Area. DOI should avail itself of this information in assessing the probable impacts on Native Americans from relocation because of coal leasing and mining in the San Juan Region. All

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Coal Exploration Programs

Section 8A of the Mineral Lands Leasing Act directs the Department of Interior to conduct an exploration program to delineate the extent, quality and value of federal coal holdings. This program was in effect abolished by BLM's failure to provide funding to conduct it; instead, BLM adopted the policy of relying on data to be provided by industry in delineating tract boundaries, determining fair market value, etc.

The present document does not provide a clear means of correcting this defect. No direction is given for the sharing of data privately collected and made available to the government so that fair competition for lease tracts may be achieved. Given that data obtained from private exploration efforts on federal lands may be held to be confidential [30 USC 201(b) Section 2(b)(3); 30 USC 208-1 Section 8A(c)], Interior apparently seeks to combine contradictory provisions of FCLAA and MFLA in its proposals to have private concerns evaluate federal coal reserves for public purposes such as lease sales. Agency resources directed towards the coal program should be used for exploration rather than leasing in order to facilitate intelligent, knowledgeable coal resource management.

BLM has retained in its proposals for the program a call for industry expressions of interest; this approach, discredited in the EMAS program and rejected by courts and the Congress, amounts to an abdication of BLM's planning function in determining where and when federal coal will be leased and in delineation of tract boundaries. Moreover, BLM has adopted no procedures for evaluating the true degree of interest or seriousness of industry nominations; as a result, the public is committed to the expense of tract delineation and evaluation without any assurance that competitive bidding will ensue on the nominated tracts, with some reasonable return on its investment in preparing the lease sale.

We recommend that BLM adopt some means of screening out frivolous expressions of interest as well as those for which no competitive interest exists. This could include a bond, payable upon submission of a tract nomination, that would be refunded only if bids were received on the tract from more than one bidder and exceeded some predetermined fraction of fair market value.

This concludes our comments on the draft SEIS. Thank you for this opportunity to comment.

indications are that these impacts are extremely severe and cannot be mitigated. To date BLM has not adequately analyzed these impacts in its regional coal leasing EIS and has not attempted to define concrete mitigation measures such as lands to be used for relocations, provisions for compensating costs of relocation, etc.

DOI's discussion in the SEIS of soils in San Juan Region Coal areas is highly inaccurate. According to BLM's own EMRIA reports, serious problems exist in terms of the reclamation and revegetation potential of soils over much of the three test areas studied. The description of soils given on page 201 does not apply to the extensive badlands that occur over much of the Kirtland-Fuhtland coal belt, including the coal-rich area around Bisti where many of the PRAAs and some of the delineated competitive tracts are located. BLM has erroneously cited its source BLM 1984c, the San Juan River Regional Coal Leasing EIS; we refer DOI to pages 2-17 and 3-9 of that document in which the potential reclamation problems posed by soil conditions in the San Juan Basin are stated.

DOI should be aware that in determining the climate of an area, it is the extremes that govern rather than the averages. Accordingly DOI should present in its climatological descriptions the known ranges of climate rather than mean conditions.

In regard to threatened, endangered and high-interest species in the San Juan River Region, we refer BLM to the following publications in order to complete its list of T&E species:

New Mexico Native Plants Protection Advisory Committee, A Handbook of Rare and Endemic Plants of New Mexico. Albuquerque: University of New Mexico Press, 1984.

Kinsky, Arthur M. et. al., U.S. Fish and Wildlife Service, Office of Biological Services, A Wildlife Inventory of the Star Lake-Bisti Coal Lease Area. BLM, USDOI, 1977.

As regards agriculture in the San Juan Basin of New Mexico, the SEIS does not mention the Navajo Indian Irrigation Project in either its present acreage or its planned final extent. Is this area included in the 5% cropland referred to in the SEIS (page 211)? The fact that a major regional agricultural enterprise is being developed in the San Juan River Region should be factored into the assessment of coal mining impacts; how will the two types of development affect each other, in terms of competition for water, population effects, adverse effects of air pollution on crop production, etc.?

We note in regard to the issue of compensation of agricultural users of lands leased for coal (page 211) that little information or commitment has yet been forthcoming from BLM regarding provisions for such compensation to residents threatened with displacement by mining.

DOI skips over the potentially severe visual impacts of additional coal development in the San Juan Basin, especially from the opening of new mines (page 222). Impacts of noise, dust and visual blight will degrade Chaco Culture National Historic Park, and similar impacts might be expected to national parks and monuments in Utah's coal regions as well as in other states.

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 27

- 27-1a The issue of actual leasing levels proposed by the Department of the Interior is addressed in Category 2 discussion in Chapter 7.
- 27-1b This final supplemental EIS was prepared to analyze the cumulative impacts of managing federal coal under the existing program (Proposed Action) and three alternative programs. The analysis of all alternatives recognized the amount of coal already under lease. The Purpose and Need section of Chapter 2 extensively discusses objectives of the Proposed Action. The production capacity estimates consider all leased reserves. Significant inefficiencies could result at the high coal production level if no further leasing occurs. Local economic disruptions would occur under the other scenarios without bypass and maintenance leasing. The Proposed Action is a logical way to provide the flexibility to meet whatever needs arise in the most efficient and environmentally sound manner with the participation of the public and the states.
- 27-2 The range of alternatives proposed by this comment were fully analyzed in the 1979 FES (BLM 1979a). This final supplemental EIS was intended to supplement the 1979 FES analysis by considering reasonable alternative leasing programs not included in the 1979 FES as well as by updating the analysis in the FES to reflect substantial changes that have occurred since 1979. This final supplemental EIS supplements the 1979 FES by analyzing alternative programs for leasing coal.
- 27-3 Chapter 1 traces the federal coal management program's course over the past 6 years. The program has had a basic framework that has remained intact although it has undergone evolutionary changes since 1979. Specific findings and recommendations of the Linowes Commission (Linowes and others 1984) and Office of Technology Assessment (OTA 1984) are being proposed to improve planning and appraisal procedures, and the Department of the Interior takes the position that the 1982 and 1983 changes were appropriate and their environmental effects were properly analyzed as having no significant impacts.
- 27-4 See response to Category 12, Exchanges, in the Categorical Analysis of Comments section of this chapter.
- 27-5 The text has been revised to better describe the entire proposed program, including new parts and parts that would be changed. Because none of the proposals listed in Tables 1-6 and 1-7 of the final supplemental EIS (Tables 1-5 and 1-6 in the draft) would change the framework of the program first implemented in 1979, BLM does not believe that identifying alternative revisions or means of implementation is needed or appropriate. Appendix 6 contains analyses of issues related to proposed program changes.
- 27-6 The Proposed Action would increase the opportunities for public involvement. Public participation calendars would be released early in land use planning and activity planning to give the key points and target dates for public involvement. Moreover, a minimum 30-day period would be allowed for review and comment on

the documents prepared for the regional coal teams (RCTs), and RCTs would respond to public comments in the meeting and as part of their recommendations to the Secretary of the Interior on regional coal leasing matters.

The public may obtain monthly PRLA reports from any BLM state office that is currently processing PRLAs.

See response to Category 7, Land Use Planning, in the Categorical Analysis of Comments section of this chapter.

The Department of the Interior is negotiating with several conservation groups over compliance with the court's opinion in *NEOC v. BLM*. The outcome of these negotiations will affect several major PRLA processing steps. Once the negotiations end, uniform procedures for processing all remaining coal PRLAs will be established, including the steps involved in costing out lease stipulations designed to mitigate environmental impacts.

BLM had hoped to summarize the recommendations here. Table 1-6 of the final supplemental EIS (Table 1-5 of the draft) has been revised to add the missing recommendation and response. The options in Table 1-7 of the final supplemental EIS (Table 1-6 of the draft) were taken virtually verbatim from pages 22-28 of the Office of Technology Assessment's (OTA) (1984) report.

The wording of OTA option 4 in Table 1-6 of the draft supplemental EIS is the same as the wording of that option in the OTA report.

Region-specific issues such as this one are not appropriately addressed in a programmatic EIS. These issues will be addressed locally after the Secretary of the Interior makes his decision on a coal management program.

See response to comment 15-1 and response to Category 8, Preference Right Lease Applications, in the Categorical Analysis of Comments section of this chapter.

Without more specific information on the rule changes referred to in this comment, the Department of the Interior cannot respond to the commenter's concerns.

The Department's rationale for this rule change is addressed in the preamble to the interim final rule published in January 1985 (48 FR 1304). No evidence has been presented to show that the rule illegally or unfairly limits due process.

The Department of the Interior did not discard the coal development potential screen but merely expanded the screen to include all coal with development potential rather than just coal with moderate or high development potential. See the description of the four coal screens, including the coal development screen, in Chapter 2.

SNCRMA, FCIAA, and FIPMA are not listed in Table 1-9 (Table 1-8 in the draft) because they are discussed in detail in the Major Federal and State Laws Mitigating Coal-Related Impacts section of

COMMENTS AND RESPONSES

- 27-16a In reference to the regional market analysis used as an input into the leasing level decision, the competition of concern is that between producers in meeting consumer demand for produced coal. For fair market value determination and the post-sale evaluation, the concern for competition is among producers seeking to obtain coal reserves.
- The Department of the Interior has defined promoting competition between producers for future coal contracts as an objective of the program. Whether this objective is being met and the extent to which it will be met is a subject to be addressed under activity planning and the associated regional EIS.
- 27-17 As with most industries in a market-oriented economy, the coal industry and the price of coal are affected by the supply of and demand for coal. Utilities, the major consumers of coal, have a relatively inelastic demand for coal. As the price of coal rises or falls, the amount of coal demanded remains relatively constant. But the supply of coal is relatively elastic: a slight increase in price will significantly increase the amount supplied. With the availability of more low-cost federal coal reserves, the price of free on board coal would significantly decrease while the demand for more coal would slightly increase.
- 27-18 See response to category 1, Adequacy of the Supplemental EIS, in the Categorical Analysis of Comments section this chapter.
- 27-19 See response to category 2, Leasing Levels, in the Categorical Analysis of Comments section this chapter.
- 27-20 See response to category 1, Adequacy of the Supplemental EIS, in the Categorical Analysis of Comments section this chapter.
- 27-21 The total amount of coal produced will not be significantly altered as a result of federal coal program decisions. The federal Government is a significant resource owner and participant in the market but does not control all coal resources. A total absence of future federal coal leasing would result in a rise in the price of coal and affect the pattern of coal development but not significantly affect the amount of coal produced. Coal demand is highly inelastic in the short run and relatively inelastic over the long run, and thus a large increase in the price of coal to the utilities may result in a relatively small decrease in the amount of coal demanded. Interregional shifts in coal development are documented in Chapter 3. Given the assumptions and associated forecasts used, little interregional shifting is likely to occur over the next 15 years without a federal coal program. Interregional shifts and associated environmental impacts are beyond the scope of this document and would be analyzed in regional EISs as part of activity planning if the Secretary selects the Proposed Action.
- 27-22 See response to category 2, Leasing Levels, in the Categorical Analysis of Comments section in this chapter.

- Chapter 1. With regard to Native Americans, no one law describes any trust responsibility that would affect development of federal coal. The relationship between Native Americans and the Secretary of the Interior is governed by many treaties, laws, and court decisions. Although the Department of the Interior is aware of its responsibilities, it believes this issue is best handled by a discussion in the Native American Issues section of Chapter 4 rather than by listing such treaties and laws in a summary table that is not intended to be all inclusive. With regard to the Navajo-Hopi Relocation Act, this law does not regulate any aspect of coal development but will affect title to coal deposits as a result of land transfers under its provisions.
- 27-12 See response to comment 27-2.
- 27-13 See response to comment 27-1. BLM believes that its analysis correctly portrays the relationship between development of private and federal coal.
- 27-13a See response to Category 9, Section 7 and Section 3 Diligence Provisions of the Mineral Leasing Act, in the Categorical Analysis section of this chapter.
- 27-14 "Current analysis reveals that a policy of no future federal coal leasing would probably not cause a nationwide coal shortage. The price of coal, however, would probably increase (page 59, paragraph 2, lines 7-9, draft supplemental EIS). The economic principle is that the relationship of a commodity's supply and demand will determine the commodity's price in the absence of any nonmarket interference or market failures. Given this principle, a restriction of the relevant supply of coal would result in upward pressure on the price of coal. No presumption is made about the extent of any change in the price, only that no upward pressure would result. With this pressure, the price would probably increase.
- 27-15 The production capacity estimates are based on BLM field staff's estimate of potential capacity in each region, including all federal, state, Indian, and private reserves. Because most private firms are loath to reveal proprietary information on reserves and plans, more potential capacity might be economical. On the other hand, less capacity may exist than was estimated. Because such information is unknown, in estimating potential need for leasing for this supplemental EIS, the conservative figures for capacity must be used. If more capacity exists, differences between the Proposed Action and No New Federal Leasing would be reduced, and the need for leasing would lessen. These impacts would be within the range evaluated in the supplemental EIS.
- 27-16 The Department of the Interior does not believe that the timing and location of new coal development are controlled by the extent of federal coal leasing. Rather, timing and location appear to be controlled by market demand. As a result, all BLM land use plans deal with uncertainty regarding the nature, extent, and location of future development. BLM land use procedures are described in 43 CFR 1600.

CONSULTATION AND COORDINATION

- 27-22a The methodologies included in the regional market analysis are used to address objectives of the coal program. One objective is to facilitate the timely and orderly development of coal reserves to meet the Nation's energy needs. The expressions of interest and strategic supply methodologies, along with the production needs methodologies, provide leasing options to meet alternative interpretations of the market's needs and demands for federal coal leases.
- 27-22b Each methodology attempts to define a single objective of the coal program. The leasing level decision, however, is based on a broad range of objectives and constraints. With regard to land use planning, that process will have been completed long before a leasing level is established.
- 27-23 To date, the past sales methodology has not used any proprietary data. This is the case with all the methodologies used in the regional market analysis. But where proprietary data will add to the decisionmaker's insight on the issue, the data will be used by aggregating it to avoid disclosure.
- 27-23 Establishing a leasing level is a process of balancing the many objectives of the coal program. By its nature, this process is subjective but not arbitrary. The leasing level technical paper is prepared for the RCT to consider not only the methodologies but also other factors of importance. This paper would be available for public review and comment before the RCT makes its leasing level recommendation to the Secretary.
- 27-23 Environmental assessments were prepared on the incremental changes to the program. The issue of the adequacy of one of them is before the courts (*WPEC v. Burford*)—Civil No. 82-2763 (D.C.C.). All the revisions made or proposed in the program since 1979 have been analyzed in environmental assessments resulting in findings of no significant impact. This final supplemental EIS includes all aspects of the Proposed Action that are relevant to National Environmental Policy Act analysis. See response to Category 1, Adequacy of Draft Supplemental EIS, in the Categorical Analysis of Comments section of this chapter.
- 27-24 The commenter appears to confuse consultation with consent. The 1982 rulemaking kept surface owner consultation as one of the four screens of land use planning. See CFR 3420.11-4(a)(4)(i). BLM's procedures are now and always have been to conduct surface owner consultation before land use planning is completed, for the very reasons the commenter gives.
- 27-25 The rules as proposed appear in Appendix 6 in this supplemental EIS.
- 27-26 Experience gained in the federal coal management program reveals the need for more emphasis on the early evaluation and collection of data to support all phases of coal leasing. BLM has proposed

establishing data adequacy standards and guidelines for applying the four coal screens during land use planning. These standards and guidelines will permit responsible BLM officials to identify data needs for coal activity planning and to develop plans and schedules for data acquisition.

With the assistance of science advisors, the regional coal teams (RCTs) will develop regional and site-specific data adequacy standards and guidelines for use in tract delineation and impact evaluation, and fair market value determination. BLM believes that the added emphases on data and data adequacy, along with the use of science advisors, will help ensure that no federal coal tracts will be offered for sale unless enough information exists to allow tract delineation, evaluation of the possible effects of mining, and determination of fair market value.

Market analysis will involve a three-phased process, each phase of which will be subject to public review. Before the first RCT meeting, a long-range market analysis will be released to the public. This analysis will be used by the RCT to determine if leasing is needed or if it can be deferred. If the RCT, considering public comments, decides that leasing should occur, a leasing level paper based on a regional market analysis will be developed by the lead state director and released to the public and the RCT. Public comments on the leasing level paper will be considered by the RCT in establishing the regional leasing level. A third market analysis will be prepared before the RCT's deliberations on a lease sale decision. As with the two previous market analyses, this analysis will also be released to the public for review and comment. For a more detailed discussion on market analysis, see Chapter 2 of this final supplemental EIS.

Though the RCTs and the Secretary of the Interior will seriously consider the first two of these market analyses in making leasing decisions, these analyses are among many factors considered in reaching these decisions. Environmental and socioeconomic factors will also be considered in setting leasing levels, and the relative importance of these factors will vary from region to region. Therefore, it is impractical to create a specific formula through which a leasing level will be derived without considering differing regional conditions.

Resource management plans (RMPs) will be required for all new activity planning starts. BLM believes that the management framework plans for current rounds of activity planning have been satisfactorily updated to comply with the spirit and intent of the Federal Land Policy and Management Act. Thus, RCT's may continue current rounds of activity planning using existing land use plans.

The discussion on page 80 of the draft supplemental EIS refers the reader to Chapter 1, in which further discussion (page 27) defines "most remaining PRLAs" as all PRLAs except those already covered in five environmental documents, one of which is the San Juan River

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	<p>PELAs. Land use planning was completed on the San Juan River PELAs as well as on the rest of the area being considered for competitive leasing in the Chaco/San Juan Update of September 1981, an amendment to the Chaco and San Juan WFPs. The Department of the Interior believes that this land use planning adequately addresses the PELAs.</p> <p>The Department of the Interior will consider these comments in developing specific guidance on the processing of PELAs.</p> <p>Land use planning would continue to be an important part of any program the Secretary of the Interior selects. Any coal lands that may be proposed for consideration for leasing, through regional activity planning, lease by application, or preference right leasing, must first be included in a comprehensive land use plan. Through this process, the Department of the Interior can control when and where coal is offered for lease sale.</p> <p>Leasing levels and the location of proposed lease tracts are region-specific issues, which will be addressed in the context of regional activity planning if the Secretary chooses the Proposed Action. Land use planning considerations, along with market analyses, however, are important in determining where, when, and how much to lease. These factors will receive greater attention by regional coal teams and the Department of the Interior under the Proposed Action and the other leasing alternatives than under no action.</p> <p>The regional multipliers used to predict resource impacts were developed from regional coal EISs (Chapter 4 of this supplemental EIS).</p> <p>See response to comment 15-3.</p> <p>Uncertainty does not plague local communities, but it is a trade-off that results from leasing policies that choose to provide more than adequate coal resources for development.</p> <p>General types of social and economic impacts are described in the General impacts section of the supplemental EIS. A detailed analysis of changes in rural communities is beyond the scope of a programmatic EIS. Site-specific EISs will address environmental impacts at the rural level if the Secretary selects the Proposed Action.</p> <p>Future site-specific EISs will address environmental impacts at the community level. See the General impacts section (pages 133-139) of the draft supplemental EIS for a general discussion of impacts to the socioeconomic environment.</p> <p>Page 165 of the draft supplemental EIS states that increased project traffic would increase accidents and that traffic accidents would increase directly in proportion to increased traffic volume and the deterioration in road conditions resulting from increased use. Traffic accidents, road use, and maintenance costs cannot be projected at the programmatic level because the locations of coal tracts to be developed are unknown.</p>	
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27-35	<p>See the General Impacts section (pages 133-139) of the draft supplemental EIS for a discussion of impacts to the socioeconomic environment. The discussion on housing and infrastructure relate directly to costs associated with increases or shifts in population. Actual cost estimates, however, are beyond the scope of this supplemental EIS because site-specific information on communities that would be affected is not included in a programmatic analysis of this type.</p> <p>Fugitive dust is a serious problem and can be a substantial impact. Whether a mine would violate any standard can be predicted only on a site-specific basis, an analysis beyond the scope of this programmatic EIS.</p> <p>The text has been revised in response to this comment.</p> <p>Air pollution control is clearly the responsibility of the Environmental Protection Agency (EPA). The extent of Department of the Interior's involvement will depend on the result of the EPA's current rulemaking on inclusion of surface coal mines as a major stationary source of fugitive emissions. Responsibility for regulating air pollution rests with the EPA. To avoid confusion and duplication, pollution control measures and requirements will continue to be at the EPA's direction.</p> <p>Your suggestion is outside the scope of analysis of this supplemental EIS, which is a programmatic supplement to assess the national impacts of four federal coal management program alternatives. The scope of this supplement is limited to analyzing program-level impacts.</p> <p>The impact analysis addresses the following cycles of coal development: (1) exploration and mine development, (2) surface and subsurface extraction and beneficiation, and (3) transportation. The analysis in this supplemental EIS does not cover the impact of conversion facilities because development of new conversion facilities cannot be shown to depend on new federal coal leasing at the programmatic level. Where conversion facilities are proposed for leasing or mining of federal coal, the building of such facilities will require compliance with the National Environmental Policy Act. One observation, however, can be made: because this supplemental EIS projects coal production to be less than that projected by the 1979 FRS (BLM 1979a), fewer impacts would result from the fewer conversions that might occur. Regional EISs and later site-specific analyses of individual tracts will evaluate potential impacts of leasing if the Secretary adopts the Proposed Action. The location and type of new facilities are better addressed at a later review and decision point in site-specific or regional analyses when more specific data exists.</p> <p>For a complete discussion of the scope of analysis, see Chapter 4, Scope of the Analysis and Analytical Approach.</p>	
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CONSULTATION AND COORDINATION

27-39 See response to comment 27-38. Although the supplemental EIS does not examine program-level energy alternatives, the 1979 Federal Coal Management Program FES examined trends in traditional and nontraditional energy sources.

27-40 The concern about the effects of coal leasing on the Navajo-Hopi relocation program was identified under the discussion of the San Juan River Region in the Native American Issues section of Chapter 4, page 179 of the draft supplemental EIS. This discussion has been amended to reflect a more general concern about impacts on Native Americans from relocation because of coal leasing and mining in the San Juan River Region. This added discussion also includes the need to define concrete mitigation measures, such as lands to be used for relocation and provisions for compensating for the costs of relocation.

27-41 See response to comment 15-2.

27-42 Ranges of average annual precipitation are used to describe the climate portion of the affected environment to help provide an understanding of soils, vegetation, and agriculture.

27-43 Thanks for the references to the two additional publications. All threatened and endangered species noted in this supplemental EIS were taken from letters from the U.S. Fish and Wildlife Service, the New Mexico Department of Game and Fish, and the New Mexico Resource Management and Development Division.

27-44 The present and potential irrigated acreage in the Navajo Indian Irrigation Project has been added to the San Juan River portion of the Socioeconomics section of Chapter 4. The 40,000 irrigated acres in the project are included in the 5 percent cropland referred to on page 211 of the draft supplemental EIS.

The supplemental EIS deals with program-level impacts of three levels of coal production under four different alternatives. The supplemental EIS does not assess the impacts of such interrelated projects as the Navajo Indian Irrigation Project because specific locations of coal development would be required to conduct that level of analysis. Impacts of interrelated projects will be addressed in progressively more site-specific environmental analyses in later region coal EISs and EISs or environmental assessments on individual lease or mine permit applications.

27-45 Although these concerns are of value, a detailed impact analysis is too site-specific for this supplemental EIS. Regional and project analyses should rightfully include such concerns. Because of the small amount of expansion predicted in Utah's coal regions, little impact is expected for the region's visual resources.

27-46 Funding was nearly ended for coal drilling in 1983 and 1984 because of budget cutbacks that coincided with depressed markets. In 1985 the drilling program was restarted to acquire more data for deficient tracts before they would be considered for sale in the next round of activity planning.

Before the resource can be evaluated, whether enough data of high enough quality exists must be determined to meet the data standards being developed nationwide and regionally. As proposed, the science advisor for nonrenewable resources would assess the adequacy of coal data used in land use planning and activity planning. The Review Council would be responsible for assessing the coal data adequacy for fair market value determinations.

The basic sources of geologic data for evaluating coal tracts are geologic reports, exploration licenses, private land exploration, and BLM drilling projects. The data obtained under exploration licenses is an important part of the overall data base that BLM can use in evaluating tracts. Additionally, data supplied from private lands can also be used and is particularly important for the eastern states. The data from both of these sources is proprietary.

BLM calculates total resources and recoverable resources using all available data. More data from a confidential source could significantly change the resource figures, but resource figures can be published for tracts being offered for lease because these figures are not proprietary. The Rocky Mountain Regional Solicitor has stated that BLM's estimate of coal in place is not proprietary and can be published. Publication of this data will assure that all bidders are aware of BLM's interpretations of the latest exploration results.

The call for expressions of leasing interest in the Proposed Action is unrelated to the industry nomination concept in ENARS. Expressions of leasing interest are used solely as a reference to identify areas where tracts might be delineated.

27-47

27-47

28

WESTERN ENERGY COMPANY

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May 3, 1985

Mr. Jack Edwards
Project Leader
Division of Environmental
Impact Statement Services
Bureau of Land Management
555 Zang Street
First Floor East
Denver, CO 80228

Dear Mr. Edwards:

Western Energy Company appreciates the opportunity to provide comments on the Federal Coal Management Program, Draft EIS Supplement. Western is a wholly-owned subsidiary of The Montana Power Company, a Montana corporation. Western operates the Rosebud Mine at Colstrip, Montana. The mine supplies coal from federal and private leases to the mine-mouth Colstrip Units 1, 2 and 3, and to utilities in the upper Midwest.

The mine produced 11.9 million tons of coal in 1984. To date, the mine has produced approximately 120 million tons of which approximately 40 percent has been federal coal. The mine is located in an area containing a checkerboard ownership pattern of federal and private leases which account for the high percentage of federal production.

Western disagrees with the statement made at the bottom of page 176 and continuing on page 177 regarding the past and future impacts of coal development near the Northern Cheyenne Reservation. The issue was discussed previously in the Powder River Draft EIS published January 1984. Western responded to the EIS in a letter dated April 16, 1984. A copy of that letter is enclosed. Our response to the statement on page 176 of the EIS begins on page 3 of that letter.

Western contends that the adjacent coal development has not created "significant adverse environmental and socioeconomic impacts" on the Northern Cheyenne Reservation.

Sincerely,

Edward L. Hughes

Edward L. Hughes
Economics and Permit Coordinator

ELH/sj

Enclosure

we:12:005n

RESPONSE TO COMMENT LETTER 28

The text has been changed in response to your comment. See the Litigation section of Chapter 1 for an updated discussion of this issue.

28-1

29

NATIONAL WILDLIFE FEDERATION

1412 Sixteenth Street, N.W., Washington, D.C. 20036 202-797-6800



May 8, 1985

Mr. Jack Edwards, Project Director
Bureau of Land Management, Division of EIS Services
555 Zang Street, First Floor East
Denver, Colorado 80228

Dear Mr. Edwards:

Enclosed are the comments of the National Wildlife Federation on the Draft Environmental Impact Statement Supplement of the Federal Coal Management Program.

Sincerely,

Karl Gawell
Legislative Representative
Public Lands and Energy Division

KG:kg
Enclosures



NATIONAL WILDLIFE FEDERATION

1412 Sixteenth Street, N.W., Washington, D.C. 20036 202-797-6800

COMMENTS OF THE
NATIONAL WILDLIFE FEDERATION
ON THE

DRAFT ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENT
FOR THE FEDERAL COAL MANAGEMENT PROGRAM

MAY 8, 1985

PREPARED BY
Karl Gawell
Norman L. Dean
Kathleen Zimmerman
David Alberswerth
Jonathan Yeo

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- I) The proposed management program fails to adequately protect the environment by ensuring the determination of lands unsuitable for mining before leasing;
- II) The proposed management program fails to assure adequate review of the 7 billion tons of federal coal already undergoing activity planning;
- III) The proposed management program fails to implement key recommendations of the Linowes Commission report: Report of the Commission on Fair Market Value for Federal Coal Leasing;
- IV) The proposed management program fails to implement key recommendations of the Office of Technology Assessment report: Environmental Protection in the Federal Coal Leasing Program;
- V) The proposed policies and procedures for determining leasing levels have significant legal and practical flaws;
- VI) The proposed program fails to provide data adequacy standards for land use and activity planning;
- VII) The proposed program relies far too heavily on procedures and guidance rather than regulations; and,
- VIII) The Draft Environmental Impact Statement Supplement is inadequate in several respects.

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INTRODUCTION

The National Wildlife Federation represents 4.5 million members and supporters who have a significant interest in the management of the public lands and minerals. The Federation has a long-standing interest in the Federal Coal Management Program and appreciates this opportunity to comment on the Bureau of Land Management's (BLM) Draft Environmental Impact Statement Supplement (DEISS).¹

The Federation has several serious concerns about the DEISS and the program which the Department of the Interior (DOI) is proposing for the management of federal coal resources. Our comments review the DEISS and its referenced documents by focusing on key problems with the proposed management program.² In particular, our comments address the following concerns:

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1. The proposed management program fails to adequately protect the environment by ensuring the determination of lands unsuitable for mining before leasing.

The unsuitability criteria were developed in response to a May 24, 1977, memorandum of the President, instructing the Secretary of the Interior to lease "only those areas where mining is environmentally acceptable and compatible with other land uses."³ The criteria, as developed, were designed to address "most major conflicts between coal and other resources."⁴

Generally, they involve significant irreplaceable resources which face potentially serious harm from coal development. Wildlife habitat, threatened and endangered species and their habitat, cultural and historic resources, natural areas, scenic areas, wilderness study areas, wetlands, floodplains, municipal watersheds, prime farm lands, fragile soils, and other sensitive resources are intended to be protected principally through these criteria.

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Furthermore, as the 1979 Final Environmental Impact Statement for the Federal Coal Management Program (1979 FEIS) stated:

A principal purpose of the unsuitability criteria is to ensure that the responsibility of determining Federal lands unsuitable for coal mining is fulfilled in as consistent, uniform, and objective a manner as possible so that all parties -- public officials, coal companies, environmentalists, and the public -- can have confidence in the unsuitability decisions.⁵

The application of the unsuitability criteria before deciding to lease federal coal for development has several additional benefits. The 1979 FEIS describes some of these:

to provide greater predictability for all parties in the coal management program, to ensure that lands which clearly should not be mined are excluded from leasing consideration as promptly as possible, and to avoid the costly situation for both a coal company and the Federal government of taking a tract all the way through lease sale and mine plan development only to find that it is either unminable or would require such restrictive stipulations in the mine plan or mining permit as to make mining uneconomic.⁶

In response to the critical findings of the Office of Technology Assessment (OTA) study entitled: Environmental Protection in the Federal Coal Program, the Secretary of the Interior directed the Bureau of Land Management to examine the coal management program's unsuitability criteria. The BLM published the results of its examination in a document entitled: A Review of the Unsuitability Criteria in Federal Coal Leasing and offered the study for public review and

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A. The "proposed action" fails to include five critically needed criteria for reclamationability, wetlands, Class I air quality, sole source drinking water supplies, and leased lands.

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The Review and the DEISS fail to propose the addition of five critically needed unsuitability criteria. The following discussion examines the need for new unsuitability criteria for reclamationability, wetlands, Class I air quality, sole-source drinking water supplies and previously leased lands.

1. Reclamationability

One essential purpose of the Surface Mining Control and Reclamation Act of 1977 (SMCRA) is to "assure that surface mining operations are not conducted where reclamation...is not feasible." 30 U.S.C. 1202(c). Section 522(a)(2) provides that an area "shall" be designated unsuitable if "reclamation pursuant to the requirements of this Act is not technologically and economically feasible." 30 U.S.C. 1272(a)(2). The failure of BLM to promulgate a reclamationability criterion therefore is inconsistent with the plain language of SMCRA.

More importantly, by not including reclamationability in the unsuitability criteria and considering it only in the later permitting application stage, DOI may allow large areas with soil of poor reclamation potential to be leased. Federal coal

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comment as part of the DEISS. The three stated purposes of the Review were to: (1) analyze the effects of amendments made to the rules in 43 CFR § 3461 in 1982 and 1983; (2) evaluate BLM's experiences in applying these criteria; and (3) address the need to establish standards and guidelines for measuring data adequacy.⁷ These were the three areas of concern in the unsuitability process found by the OTA report.

Based upon the conclusions of the Review, the proposed coal management program does not contemplate any major changes in the unsuitability criteria; only minor modifications have been suggested. This is unfortunate. The overwhelming weight of the evidence available to BLM suggests that significant changes in the criteria are warranted. Among other things, new criteria need to be developed to protect unreclaimable lands, wetlands, Class I air quality areas, sole source drinking water supplies and already leased lands. The existing criteria need to be amended to restore full protection to cultural and historic sites, areas of critical environmental concern and sensitive plants. Finally, various practical problems in applying the existing criteria need to be corrected. Each of these points will be examined briefly in turn.

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First, relatively few lands are covered by the critical wildlife habitat, municipal watershed, or floodplain criteria which the Review claims affords "some degree of protection" to unreclaimable lands. Badlands areas of New Mexico, for example, are entitled to the protection of SMCRA, notwithstanding the fact that they are not municipal watersheds or floodplains. Second, BLM's contention that "substantial, useful research" exists that can be considered during land-use and activity planning argues that a reclaimability criterion would be possible to apply during these stages.

Third, the possibility that post-mine use might be different is irrelevant since reclamation to other post-mining uses could be considered as part of an exemption.

The last argument of the Review, that the mine plan review addresses the reclaimability question, does not justify ignoring the obligation of the BLM to apply SMCRA's unsuitability criterion during land-use planning. The BLM is directed by the Federal Land Policy and Management Act of 1976 (FLEPMA) to give priority during the land-use planning process to the protection and prevention of irreparable damage to important natural resources. Federal land management decisions, such as coal leasing, must conform with this mandate. Protection of unreclaimable soils from irreparable damage through an unsuitability criterion is, therefore, essential to meet this obligation.

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in the West underlies some very fragile soils. Hostile climate, severe topography, and poor soil chemistry can make reclamation of many areas problematic. Areas such as the badlands in the San Juan River Region are extremely difficult, if not impossible, to reclaim.⁸ Lands in the Wyoming portion of the Green-River Hams-Fork coal region pose difficult and unresolved reclamation problems, particularly lands which are critical wildlife habitat.⁹

The DOI should issue regulations defining an unsuitability criteria for reclaimability, as BLM proposed in the 1979 FEIS.¹⁰ This new criteria should exclude from leasing, by soil types and natural conditions, all lands where reclamation success has not been demonstrated to be economically and technologically feasible.

BLM's Review argues against adding reclaimability as a criterion, contending that: 1) successful passage of lands through other criteria indicate that some degree of reclamation is possible; 2) research on reclamation technology is considered during land use and activity planning; 3) post-mine land use might be different than pre-mining; and 4) the permit application review includes an extensive analysis of reclaimability.¹¹ None of these arguments justifies the absence of an unsuitability criterion.

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Among other things, a wetlands criterion would ensure compliance with Executive Orders 11988 and 11990. According to the findings of the interagency Wetlands Task Force in 1979:

...not having a wetland criterion, would be contrary to the requirement in the President's Executive Order that each agency provide leadership and take action to preserve and enhance wetlands.¹⁵

Section 522 of SMCRA provides that certain types of lands be designated as unsuitable, including: (1) fragile or historic lands; (2) renewable resource lands; and (3) natural hazard lands. The Wetlands Task Force correctly concluded that wetlands display all of these characteristics to some degree, and therefore should be included in the criteria.

The Denver Office of the U.S. Fish and Wildlife Service recently wrote the BLM's Washington Office supporting a new wetlands criterion:

We do not believe that it is premature to add a new wetlands criterion based upon the 1979 Task Force Issue Paper, unless other means of wetlands consideration are achieved through modification of Criterion #16 and #18. Since the 1979 Issue Paper, we do not see the issues have changed significantly, except that there may be more emphasis on wetlands protection and a greater need for wetlands unsuitability language.¹⁶

The 1979 Wetlands Task Force Issue Paper, which examines the specific criteria which the BLM should propose, is appended to these comments.

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As noted in the Review, a reclamation criterion "would allow industry and government to focus on specific reclamation problems early in the planning process and, if needed, propose studies to resolve these problems before a specific area is leased."¹²

2. Wetlands

In addition to a reclamation criterion, DOI should promulgate a criterion for the protection of wetlands. Although some wetlands may be protected by other criteria, many sensitive wetland areas are not covered in the unsuitability process. As the Review admits, "equally sensitive wetlands go unrecognized."¹³

Wetlands are vital renewable resources which play a crucial role in supporting waterfowl and plant species, maintaining subsurface water tables, reducing impacts of floods and improving water quality by filtering surface runoff. Approximately 56 percent of the original wetlands in the 48 coterminous states have been destroyed and the destruction continues at the rate of 300,000 acres per year.¹⁴

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BLM's Review, while recognizing the need to protect wetlands, concluded that reliance on Washington Office Instruction Memorandum 83-602 to implement Executive Orders 11988 and 11990 along with the multiple resource trade-off (MRT-O) screen would provide adequate protection.¹⁷ The reliance on Instruction Memoranda is an inadequate means to protect wetlands, and relying on the MRT-O screen is inappropriate. Both of these approaches to protecting significant resources are critiqued later in these comments.

3. Air Quality: Class I PSD Areas

BLM should also promulgate an unsuitability criterion for Class I PSD areas. Such a criterion has been suggested by the Environmental Protection Agency (EPA):

Air quality considerations need to be added to unsuitability criteria. Specifically, Prevention of Significant Deterioration (PSD) could and should be worked into the criteria dealing with Federal Land Systems and Wilderness Study Criteria. We believe that it would be ill-advised to lease coal in areas where air quality impacts of mining would likely violate State or Federal standards.¹⁸

A criterion should be issued that would exclude from leasing lands which if developed would result in a violation of the PSD standards for Class I air quality areas.

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The DEISS itself recognizes the importance of protecting Class I areas. It states, "PSD Class I areas, predominantly National Parks and certain wilderness areas, have the greatest limitations: virtually any degradation would be significant." (DEISS, pg 189).

The need for addressing degradation of PSD Class I areas as coal development increases in the western coal regions, as is evidenced by the regional coal EIS's. The Fort Union Coal Region EIS air quality analysis indicates that "the PSD SO₂ increment for the South Unit of the Theodore Roosevelt National Park has already been consumed, and the 3-hour SO₂ increment has been largely consumed for the North Unit by previously permitted PSD sources."¹⁹ Similar constraints have been noted in Utah, Wyoming and New Mexico.^{20, 21, 22}

The Review concludes that an air quality criterion is not needed because of the difficulty involved in applying it and because there may be some protection afforded by other criteria.²³

The difficulty of applying a PSD criterion has been greatly exaggerated. The EPA proposed a simple method of applying such a criterion to the Department in 1979, and offered to assist the Department in implementing it.²⁴ Surprisingly, the Review does not examine this proposal in any detail.

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importance of this resource for a multitude of uses on federal lands, the sole-source water supply criteria should be adopted. The significance of the impacts of mining on groundwater supplies is a growing concern. According to a recent USGS report,

"the effects of mining on ground waters probably will be much more severe and have a longer duration than effects on surface waters."²⁶

The Review recognizes that domestic water supplies can be adversely impacted by coal development. It concludes, however, that these values "can be protected through the multiple resource trade-off screen."²⁷ As detailed later in our comments, we disagree with the proposal to protect significant resources such as sole-source water supplies through the multiple resource trade-off screen and its cost-benefit approach.

5. Previously Leased Lands

In 1979, the Department of Interior provided that lands already leased and lands covered by preference right lease applications (PRLA's) were subject to unsuitability review during land use planning along with as yet unleased lands. See 43 CFR 3461.4-1, 3461.4-2 (1979). However, the present regulations, as amended in December 1983, substantially exempt leased lands and lands covered by PRLA's from the unsuitability

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The other criteria do not assure adequate protection of Class I PSD areas. Criterion 5 provides only for visual scenic quality protection, while the Class I PSD program limits the amounts of many additional air quality related values, such as acid deposition. Criterion 1 protects federal lands, but it does not protect these lands from outside influences, such as air pollution.

The lands protected by Class I PSD standards, such as National Parks, are significant national resources. The consumption of PSD increments in the federal coal production regions makes it critical for the Department to implement a Class I PSD unsuitability criteria.

4. Sole-source Water Supplies

The protection of important sole-source water supplies and important aquifer recharge areas are not addressed by the unsuitability criteria. The U.S. Environmental Protection Agency has recommended to the Department that, "Sole-source aquifers and important aquifer recharge areas should also be considered as areas unsuitable for mining."²⁵ We agree.

Because of the susceptibility of groundwater to severe, long-term degradation due to strip mining and the rarity and

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The Department's reliance on the decision in Texaco v. Andrus, 11 ELR 20179 (D.D.C. 1980), to support these exemptions is misplaced. In Texaco, the Court refused to impose unsuitability criteria based on acts other than SMCRA to presently leased lands. Adopting a position then advanced by the Department, however, the Court concluded that the unsuitability criteria enumerated in SMCRA itself are applicable to leased lands. Among other things the SMCRA criteria preclude mining in areas where coal development will:

1. occur on lands where reclamation is not feasible (522(a)(2));
2. be incompatible with State or local land use plans (522(a)(3)(A));
3. affect fragile or historic lands (522(a)(3)(B));
4. affect renewable resource lands (522(a)(3)(C));
5. affect natural hazard lands (522(a)(3)(D));
6. adversely affect any publicly owned park or places included in the National Register of Historic Sites (522(e)(3));
7. be within 100 feet of any public road (522(e)(4)); and,
8. be within 300 feet of any occupied dwelling or public building (522(e)(5)).

Rather than responding to the Texaco case by modifying the scope of the unsuitability criteria as they apply to previously

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review (43 CFR 3461.1). Leased lands are specifically excluded from review under 17 of the 20 existing unsuitability criteria. Since the majority of existing leases and the prospecting permits upon which PRLAs are based were issued prior to the enactment of the National Environmental Policy Act, there has never been a review of the environmental impacts of mining on these lands. Their exemption now from the unsuitability review is therefore especially troubling.

The Department's effective elimination of leased lands from unsuitability review is contrary to the plain language and intent of SMCRA. Section 522(b) of SMCRA requires a review of all "Federal lands." SMCRA's definition of Federal lands does not distinguish between leased lands and unleased lands:

"Federal lands" means any land, including mineral interests, owned by the United States.....30 USC 1291(4)

Further the legislative history of SMCRA supports an expansive application of the unsuitability criteria. The report on the Senate bill stated that "[w]ith regard to Federal lands, [Section 522(b)] requires the Secretary to conduct a review of all Federal lands to determine areas unsuitable for mining." S.Rept. No.128, 95th Congress, 1st Session 94 (1977); see also 123 Cong. Rec. 15747 (1977) (Remarks of Senator Baker).

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leased areas, BLM simply exempted previously leased lands from the process altogether. For example, since Criteria #7 declares all places included in the National Register of Historic Places to be unsuitable rather than only those areas where mining operations "will adversely affect...places included in the National Register" (522(c)(3)), leased lands were exempted from unsuitability review under this criterion, and no alternative criterion pertaining to National Historic Sites was applied to leased lands. Leased lands escape review entirely.

Under the present regulations, leased lands and lands covered by PRLAs will be subject to unsuitability review under only two of the SMCRA categories: park land and the 300 foot buffer zone.

To comply with the statutory requirements of SMCRA and the holding in Texaco, the Department must amend its regulations to include additional unsuitability criteria for lands covered by existing leases and preference right lease applications. These criteria should, at a minimum, include the categories of unsuitable lands specifically set forth in Section 522 of SMCRA including those referenced above.

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8 The proposed management program unduly narrows the existing criteria.

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In addition to the need for the five new criteria, several of the existing criteria fail to protect significant natural resources due to their overly restricted scope. The DEISS fails to propose amendments to the existing criteria to adequately protect cultural and historic sites, natural areas and sensitive plants.

1. Cultural and Historic Sites

The proposed action fails to adequately protect cultural and historic sites. While the Review's analysis supports inclusion of all "eligible" sites in the unsuitability criteria, its recommendations fail to do so.

The Department's 1983 rulemaking which removed "eligible" sites from protection violated the National Historic Preservation Act (NHPA) and the Surface Mining Control and Reclamation Act. The Congress clearly intended the protections afforded historic places to extend to all eligible sites, and not only those which have been officially listed on the National Register. The severely restrictive unsuitability criteria of the proposed program leaves unprotected the

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Natural areas involve "areas of critical environmental concern" and similar significant lands. "Lack of definition" is not an adequate justification to subject "areas of critical environmental concern" (ACEC's) to the "cost-benefit" analysis based protections of the MRT-O screen.

The Federal Land Policy and Management Act (FLPMA) specifically directs that the identification and protection of "ACEC's" is a priority for the land-use planning process.³⁰ The proposal of the Review violates this obligation. Criterion #8 should remain part of the unsuitability process. Instead of dropping the criteria, BLM should propose a substitute which defines the lands and management designations which this criteria includes with more precision.

Further, the Review suggests the elimination of the first exemption to Criterion #8 (natural areas).³¹ The Review's analysis concludes that the exemption of natural areas because they are of only "regional or local" significance has been used to circumvent the unsuitability process. We agree with this proposal and urge the Department to implement it.

3. Sensitive Plants

The Review proposes the inclusion of "sensitive plants" in Criterion #15. It indicates that:

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thousands of sites which meet the criteria for National Register inclusion, but which have not yet been formally listed.

The proposal of the Review to defer eligible site protection to the multiple resource trade-off screen fails to provide the protection required by NHPA and SMCRA. In fact, the proposal would specifically recognize that historic sites which fully qualify for listing in the National Register may not be protected. It requires the "authorized officer" to determine whether or not the "value" of the "historic site" is greater than the "value" of the coal, implicitly recognizing that in at least some cases the "value" of the coal will prevail.²⁸ Subjecting historic sites to such a "cost-benefit" test is contrary to the requirements of the National Historic Preservation Act, and SMCRA.

2. Natural Areas

The Review proposes the elimination of the term "natural areas" from Criterion #8, suggesting instead that such areas be protected through the multiple resource trade-off screen. The Review justifies this proposal on the grounds that "the ability to apply this Criterion, or even to identify the data needed to apply the Criterion, is limited by a lack of definition."²⁹

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survive the screening process. Further, the M&T-O screen would not require that proposed mitigation measures be determined to be feasible.

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cont

The origins of this ill-advised policy of using this screen in lieu of the unsuitability process are unclear. The Environmental Assessment for the 1983 regulatory amendments to Criteria #7 (cultural and historic sites) proposed this approach arguing that, "retaining and complying with the existing provisions would limit decision-making flexibility by summarily declaring land unsuitable, thereby preventing cost-benefit considerations on a case-by-case basis that are necessary for proper multiple resource decisions."³³

The New Mexico case study likewise proposes this approach, contending the unsuitability process "could result in considerable delays and expense to the coal leasing program," and "the process ... has been difficult."³⁴

Fragile soils, wetlands, National Parks, sole-source water supplies, and cultural and historic sites are all resources of recognized national significance. In every case, specific federal laws have been enacted or Executive Orders issued to ensure the protection of these resources. The multiple use resource-trade off approach specifically implies that in some cases these non-coal resource values will not be protected.

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the advantage of including sensitive plants under this Criterion is that plants that are truly sensitive would be protected, and plants with uncertain status would be studied further. The risk of disturbing a sensitive plant, or approving any action that causes a plant to become extinct, are reduced by addressing this issue under Criterion #15.³²

We agree with the proposed amendment. The DEISS should include this proposal as part of its proposed action, and regulations should be promulgated consistent with this suggestion.

C. The multiple resource trade-off screen would not adequately protect significant resources.

The Review proposes to resolve most of the problems with the inadequate coverage of the existing unsuitability criteria through the multiple resource trade-off screen. Fragile, unreclaimable soils, wetlands, Class I PSD areas, sole-source water supplies, eligible cultural and historic sites, riparian areas, Native American sacred sites, buffer zones for wild and scenic rivers, and other resources would rely on this land-use planning screen for protection from destruction.

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The multiple resource trade-off screen would provide for the protection of such significant areas, however, only if they pass a "cost-benefit" test. Notably, these resources would have to be "clearly superior" to the coal resources in order to

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This is contrary to the obligation imposed upon the Secretary by FLPMA to manage the public lands in a manner that will "protect the quality of scientific, scenic, historical, ecological, environmental, air and atmosphere, water resources, and archaeological values...."

Furthermore, to subject these resources to a cost-benefit analysis is inconsistent with FLPMA's requirement that public lands and resources be managed based upon the principle of "multiple-use." FLPMA's definition of "multiple-use" specifically indicates that it does not mean "the greatest economic return," which is the goal of a cost-benefit approach to public land management.

Decision-making flexibility, the potential for delay, and difficulty of analysis do not justify subjecting significant resources, such as historic sites, to a cost-benefit test.

The proposed approach would be a major departure from the federal coal management program developed in the 1979 FEIS. The 1979 program explicitly included most significant resource conflicts directly in the unsuitability criteria. The 1979 FEIS states that the multiple resource trade-off screen will be used in the land use planning process only to make adjustments to accommodate "unique, site-specific resource values clearly

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superior to coal but which are not included in the criteria."35

The proposal of the Review, incorporated into the proposed action of the DEISS, should be rejected by the Department. While the multiple-resource trade-off screen may be utilized more effectively to meet its intended purposes, it should not be used to circumvent the unsuitability process.

10. The proposed action fails to address problems with the application of the unsuitability criteria identified in the BLM's case studies and the OTA Report.

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The DEISS's only analysis of the unsuitability criteria is contained in BLM's Review, a separate document. That report was prepared on the basis of a series of 6 case studies of the use of the unsuitability criteria. Unfortunately, BLM did not release the case studies to the public for comment and analysis and NMF was forced to obtain them by filing a Freedom of Information Act request.

These case studies are the single most useful part of the BLM's review of the application of the unsuitability criteria. The case studies demonstrate serious problems in the program which require attention.

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b) Failure to correct known deficiencies of land use planning.

The New Mexico case study reveals that deficiencies with the application of the unsuitability criteria during land use planning were not subsequently corrected.³⁷ The case study notes that the first Draft EIS for the San Juan Basin coal lease sale was published without completing the unsuitability screening for Criteria 7. The New Mexico BLM subsequently published a second Draft EIS. However, this Draft continued to ignore the deficiency in the application of Criteria 7 to lands reviewed in the EIS. In the final EIS, the State Office decided to defer to the "mine plan" application of this criteria.³⁸

The case study demonstrates that inadequate application of the unsuitability criteria during land use planning may not be corrected later, even when gross deficiencies are known by the BLM Office.

c) Repeated "deferral" of unsuitability determinations to "the mine plan" where inadequate time, resources, confusion or interest group pressure often exist.

The case studies document the serious abuse of the unsuitability criteria through deferring determinations until

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1. Problems identified in the case studies

Despite some limitations, the BLM case studies, which are attached as an exhibit to these comments and incorporated by reference herein, identify five key problems that should be dealt with in the revision of the coal management program.

a) Failure to apply the unsuitability criteria during land use planning.

The case studies demonstrate repeated failures to apply unsuitability criteria during land use planning. In New Mexico, Criteria 3 and 7 were not fully applied when an amendment to the land-use plan was prepared. In Colorado, the unsuitability review was conducted during activity planning. Apparently, the BLM either failed to apply them during land use planning or their application was seriously deficient.

Overall, the case studies reveal that the BLM Offices generally fail to recognize that the unsuitability review is intended to occur during land use planning, and not be left to the activity planning process or later.

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or allowing lands to proceed beyond land use planning pending "further study" undermines the protections intended by the criteria.

d) Excessive use of the exemptions to the criteria and failure to document the exemption determination called for by the regulations.

The Utah case study notes that while 60% of one planning area was found "unsuitable," after the exemptions were applied the entire area was found suitable. Despite this suitability conclusion, the study notes that 5 of these tracts were exempted pending "further study," indicating that the criteria had not been properly applied to these tracts.⁴³

The Montana case study discusses one tract which was found unsuitable twice during land use planning for which negotiations with the surface owner subsequently resulted in a decision to grant an exemption. These negotiations were initiated because the surface owner complained about the unsuitability decision. However, the BLM apparently failed to document or address the determination called for by the exemption, since the agreement attached to the case study fails to provide for the mitigation required by the exemption. The BLM substituted this "agreement" in lieu of the determination called for by the exemption.⁴⁴

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"the mine plan." In New Mexico, Criteria 3 was deferred to the mine plan because of "confusion" in interpreting the criteria. Criteria 7 was deferred to the mine plan because surveys were "expensive."³⁹

The Wyoming case study indicates that 2 tracts considered unsuitable were carried through activity planning, and that for all tracts Criteria 7 surveys were deferred to the mine plan.⁴⁰ The continued consideration for leasing of two of these tracts was based upon the pressure exerted by the local governments to lease the tracts quickly.

The Colorado case study shows that the BLM carried unsuitable tracts through the activity planning process and, for some tracts, is still seeking to incorporate "mitigation" necessary to apply the exemptions. The case study indicates that "time constraints" resulted in no mitigation analysis being conducted.⁴¹

In the Utah case study, 5 coal lease tracts were brought through activity planning "pending further study." No justification for the deferral of unsuitability application during land use planning is provided.⁴²

The case studies demonstrate a serious circumvention of the unsuitability criteria. Deferring decisions "to the mine plan"

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Colorado case study reports that the data used during land use planning was seriously deficient and out-of-date by the time activity planning commenced.

The case studies demonstrate the need for BLM to maintain adequate data for its land use planning program, since the lack of adequate, quality data often undermines the decision making process.

2 BLM should propose amendments to the unsuitability criteria providing data adequacy standards for application of the criteria and specific requirements for applying exemptions.

The problems identified in the case studies reveal few problems which were not identified by the OTA Report. The demonstrate, however, that the problems which OTA identified are in fact widespread and "typical." OTA concluded that specific regulatory data adequacy standards were essential to correct these problems. We agree. OTA also criticized the lack of documentation required of the unsuitability review process and, in particular, the use of exemptions. We believe that the regulatory standards must also address this problem and specify criteria for applying exemptions.

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The Wyoming case study demonstrates similar behavior regarding two tracts found unsuitable under the wildlife criteria. There the BLM "consulted" with the surface owner outside of the planning process and decided to apply an exemption. However, the BLM determination failed to document its decision and ignored the arguments of the Wyoming Fish and Game Division, the Wyoming Wildlife Federation and the Wyoming Outdoor Council that the tract in question could not qualify for an exemption.⁴⁵

These case studies demonstrate that even if lands are found to be "unsuitable," the BLM typically employs the exemptions allowed by the regulations often without making the substantive determination called for by the regulations. They indicate the use of the "further study" designation and lease stipulations or "agreements" as de facto exemptions to the regulations.

e) Deficiencies in data available for application of the criteria, and of adequate, up-to-date information on affected resources.

Repeatedly, the case studies indicate that lack of data or lack of current data were serious problems in applying the criteria. In New Mexico, historic and cultural sites were not screened because the data was not available.⁴⁶ Moreover, the

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The Review does not disagree that there are serious data adequacy and standardization problems. However, the BLM Review argues against regulatory standards, claiming that the current policies to ensure data adequacy "appear to be an effective way to screen Federal lands for coal leasing."⁴⁹ This conclusion is contrary to OTA's findings. Moreover, the case studies do not support the conclusion that current policies are working effectively.

The OTA report supports a regulatory approach noting that the existing regulatory standards for data adequacy are "too vague to provide meaningful guidance to BLM personnel on the level of data and analyses needed to support the application of the unsuitability criteria..."⁵⁰

The OTA report concludes that "regulatory standards and guidelines would be more predictable, would provide better guidance to field personnel, and would be more intelligible and accessible to other participants in the leasing process than the current guidelines, which reside primarily in BLM internal memoranda."⁵¹ The OTA report found that a wide range of participants in the leasing program - including many BLM field personnel - expressed a preference for regulatory standards and guidelines because they provide more predictability and stability in leasing decisions, and facilitate public participation.⁵²

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a. Data Adequacy Standards

The BLM should propose regulatory standards to solve the problems of data inadequacy demonstrated by its case studies. Minimum levels of data quantity and quality should be required for each step in the leasing process to ensure that environmentally sensitive tracts will not be offered for lease due to insufficient data.

Data adequacy in the application of the unsuitable criteria screen was found to be a significant problem by OTA, Federal and state agencies, coal companies and environmental groups. The OTA report found that "in many cases, BLM's pre-sale data and analyses have been inadequate to base a decision on whether recently leased tracts (and those proposed to be offered in future lease sales) can be developed in an environmentally compatible manner."⁴⁷

The scoping comments of the Fish and Wildlife Service's Denver, Colorado Office note that "there is in general a lack of adequate database data to apply the criteria."⁴⁸ According to this FWS office, an adequate level of baseline wildlife information is required to adequately apply unsuitability criteria.

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The New Mexico Energy and Minerals Department also concluded in its comments on the DEIS that publication of guidelines and manuals, rather than appropriate regulations, will not allow for the BLM to hold accountable.⁵³

We agree with OTA's recommendation that regulatory standards for data adequacy are needed. In addition, we believe that these regulatory standards must address the problems identified with the use of exemptions to the criteria, as discussed below.

b. Criteria for Applying Exemptions

BLM's case studies demonstrate the excessive use of the exemptions in the criteria, often without documentation or public review as called for by the existing regulations. For example, the Wyoming case study indicates that an exemption was granted for wildlife under Criteria 15, without addressing the substantive criticisms of the Wyoming Wildlife Federation and the Wyoming Fish and Game Department that reclamation of crucial elk winter range had not been demonstrated and that the lands at issue were critical habitat for an elk population.⁵⁴

In other cases, the exemptions have been applied without any indication that the actual "determination" called for by

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the regulation has been made. For example, exempting lands based upon "further study" avoids making the determination called for by regulation. In other cases, lease stipulations or "mitigation agreements" are used instead of conducting an analysis to determine whether or not mitigation is feasible. The "agreement" reached in the Montana case study indicates that a determination regarding the effectiveness of mitigation was not possible, and specifically incorporates provisions for off-site compensatory mitigation.

OTA also found that "documentation of determinations... was not always sufficient to judge whether the supporting data and analyses were adequate (e.g., a simple statement that 'application of the unsuitability criteria has been completed'). Furthermore, BLM made extensive use of the exemptions/exceptions to the criteria, and of lease stipulations intended to accommodate data inadequacy."

The Department should propose specific regulations to ensure that the "determinations" called for are documented and based upon adequate analysis. In particular, the Department should propose regulations which require the surface management agency to publish, for public review and comment, an analysis supporting its proposed determination before any exemption is allowed.

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The Department should also eliminate the practice of deferring action on criteria and exemptions by classifying lands as "acceptable pending further study." This has become a de facto exemption, outside of the regulations, which allows unsuitable lands to proceed through activity planning. The OFA Report indicates that it found "numerous instances of 'acceptable pending further study' determinations relative to application of the unsuitability criteria...in the five leasing regions."⁵⁵

29-3b
cont.

A better approach, as stated by New Mexico office of the Fish and Wildlife Service in their scoping comments, would be to assume lands are unsuitable until there is sufficient data to indicate that lands may be suitable.⁵⁶ The Montana Department of Fish, Wildlife & Parks agreed with this approach in their scoping comments, stating that the designation "unacceptable pending further study" would "allow more time for wildlife studies prior to tract delineation and subsequent leasing and would not place companies in the position of believing the area will necessarily be available for leasing."⁵⁷

We agree. The BLM should eliminate the practice of designating lands "acceptable pending further study."

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3. Guidance documents are not effective substitutes for regulatory amendments

In order to resolve many of the problems identified in the case studies and elsewhere, the BLM Review proposes that BLM produce additional "guidance" documents. The only guidance document produced to-date has been the Draft Program Specific Manual. It was reviewed by the Federation last month and found to provide totally inadequate "guidance." Our review of the draft guidance document is appended to these comments and incorporated by reference herein.

All other "guidance" proposed by the Review has yet to be produced. Without examining the proposed guidance, it is impossible to comment on the extent to which it may resolve some of the problems identified with the unsuitability process.

In any event, guidance -- however detailed -- cannot effectively substitute for regulatory requirements and standards in the areas we have identified in these comments. The demonstrated problems with data adequacy in the unsuitability process show that data standards are integral to the protection of significant natural resources. This critical element of the unsuitability process should be developed and

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implemented with full public scrutiny. Guidance documents, and instruction memoranda, would not provide the public with an adequate opportunity to participate in the unsuitability process. Unlike regulations, guidance, even if promulgated with public review, can be rescinded or amended without notice of the change or an explanation of its basis and purpose. Consistent with FLPMA's directive that the public be involved in the management of the public lands, all unsuitability "guidance" must be promulgated as regulations.

The problems which the Review proposed that guidance resolve included defining occupied dwellings, applying the scenic quality criteria, defining the purpose of the multiple resource trade-off screen, defining municipal watersheds, standardizing data criteria for application of the wildlife criteria, instructing field managers on soils reclamation, and defining wetlands.

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II. The proposed new management program fails to assure adequate review of the 7 billion tons of federal coal already undergoing activity planning.

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The proposed action fails to identify specific procedures to assure adequate review of the lands already covered by activity planning. These pending coal lease sales are also exempted from key new environmental protections proposed by the DEISS, such as the requirement that RMP's be completed.⁵⁸

Up to 7 billion tons of coal is already being considered in activity planning. As the DEISS notes on page 15, activity planning is underway in the following western coal regions involving significant federal coal resources:⁵⁹

REGION	MILLIONS OF TONS
San Juan	800-900
Utah-SW Utah	616-800
Green River-Hams Fork	750-950
Powder River	1,200-4,800
Fort Union	454-465

These pending coal lease sales were planned without adequate attention to environmental protection. The BLM's own Review, the case studies it examined, and the OIA Report, found a variety of defects in the land use planning and activity planning for areas and tracts involved in these sales.

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These problems must be rectified. The OTA Report found deficiencies in the application of the unsuitability criteria to be the single greatest problem in the planning for these sales. BLM must, therefore, direct its State Offices to re-examine all land use and activity planning done to date for lands included in these pending sales. In particular, these lands must be subjected to unsuitability review. All exemptions to the unsuitability criteria must be documented and supported by the record.

Moreover, the EIS's for each of these sales was prepared assuming that the 1979 FEIS adequately addressed the need for new leasing.⁶⁰ The DEISS specifically indicates little need for new leasing in these regions.⁶¹ This obviously necessitates a re-examination of the need for these sales before proceeding further with activity planning and tract delineation.

This re-examination must meet the requirements of FLPMA, SMCRA, and NEPA. The BLM State Offices should be directed to re-issue Draft EIS's and land use plan amendments for all areas covered by this pending activity planning before any new leasing occurs.

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III. The proposed management program fails to implement key proposals of the Linowes Commission.

The DEISS lists in Table 1-5 the recommendations of the Linowes Commission and indicates the proposed response of the Department of the Interior. It is clear, from this table and the materials appended to the DEISS that the proposed new management program fails to implement key proposals of the Linowes Commission. In particular, the Department fails to adequately address problems identified with the determination of leasing levels and appraisal techniques. In doing so, the proposed program fails to correct two of the most critical problems of the federal coal management program highlighted by the Linowes Commission.

A. Leasing Levels

The Linowes Commission examined at length the procedures for determining leasing levels. It was critical of the Department's leasing decisions, and concluded that:

The Commission found that the Interior Department since 1981 has tended to dismiss the risks of overleasing and to exaggerate the risks of underleasing federal coal. As a result, the Department has sought to lease too much coal. The Commission concluded that a more balanced approach is needed.⁶²

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B. Appraisal Techniques

The Linowes Commission also critiques, at length, the Department's appraisal methods. The Commission recognized their importance:

... the appraisal of lease values plays the primary role in ensuring that the Government receives fair market value.⁶⁴

The Linowes Commission reviewed various aspects of the Department's appraisal policies, but stressed one need as most critical:

The Commission concluded that improved comparable sales data are a critical need for achieving more accurate Government appraisals.⁶⁵

At another point the Commission noted:

The Commission discovered that Interior Department appraisers were severely handicapped by a lack of data in using the comparable sales method.⁶⁶

While the Linowes Commission recommended specific regulatory changes to improve the Department's data base, the Interior Department has decided not to take the recommended actions.⁶⁷ The Interior Department offers no analysis or alternative proposal to address the critical problem identified by the Linowes Commission. Further, other improvements suggested for the Department's appraisal techniques, such as

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In its examination of leasing levels procedures, the Linowes Commission was critical of the procedures which were being employed. It stated:

Under both the 1979 and the current leasing level procedures, there has, in fact, been wide administrative discretion in the choice of leasing levels -- certainly in practice if not in theory. Calculations of leasing needs tend to be highly sensitive to initial assumptions, in many cases all within a plausible range. Even given a set of assumptions, the Interior Department has never adopted a single mechanical formula for setting leasing levels. The Department in recent years has employed this discretion to push hard for higher leasing levels.⁶³

In response to these concerns about determining leasing levels, the Department proposes to shift responsibility for leasing levels to the Regional Coal Teams (RCT'S). The RCT analysis, however, will still be based upon the methodology which lead to the massive leasing proposals under Secretary Watt, as described in IM 84-144. No additional criteria, or improvements in the formulation of leasing levels are proposed. In fact, the new program arguably provides even more unbridled discretion than did former Secretary Watt's ill-advised program.

As detailed later, the regulations and methodologies established by Secretary Watt as part of the "leasing for reserves" policy must be revised.

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A Land Use Planning

OTA recommended that DOI "ensure comprehensive area planning is completed before a lease offering." In particular, OTA suggested that:

completion of adequate Resource Management Plans by BLM (and the Forest Service) would ensure that comprehensive area land use planning is completed before activity planning for a lease sale and is adequate to support informed decisions on tract acceptability for leasing.⁶⁹

Under the coal management regulations promulgated in 1979, Resource Management Plans would now be required before any federal coal could be leased. The Department in 1982 repealed this regulatory requirement. Under the DEISS's proposed new coal management program, while DOI agrees that it should "expeditiously complete new RMP's" and "initiate new coal activity planning only for areas where RMP's have been completed," potentially large amounts of federal coal can be leased without RMP's.⁷⁰

The proposed action would allow the more than 7 billion tons of coal already being considered in activity planning to be leased without the preparation of RMP's for the lands involved. Given the DEISS's estimates of the need for new

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the valuation of captive tracts, have not been implemented in full.⁶⁸ Where significant variances from the Commission's recommendations are indicated in Table 1-5, no explanation or justification is given.

Absent vigorous competition for new federal coal lease tracts, the Department's appraisal techniques are critical to ensuring the receipt of "fair market value." The Linowes Commission properly identified the lack of comparable sales data as a key problem. If the Department fails to implement the recommendations of the Linowes Commission or present reasonable alternatives, its proposed coal management program will be unable to meet its obligation to ensure a fair return to the public treasury.

IV. The proposed management program fails to implement key proposals of the OTA Report.

296 The Department's response to the recommendations of the Office of Technology Assessment report, as indicated by Table 1-6, fails to implement many of OTA's recommendations. OTA's recommendations for land use planning, data base improvements, data adequacy standards, and leasing rates are substantively ignored by the proposed program.

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In particular OTA found that:

Inadequate data and analyses to support land use planning decisions were identified by OTA in two main areas: information to support application of the unsuitability criteria and coal resource data.⁷²

The Interior Department's response to these findings and recommendations are disingenuous. The DEISS indicates that BLM will propose "program specific guidance," and that it will prepare "data adequacy standards and guidelines" to ensure that planning and coal resource data is adequate.⁷³

We recently reviewed the Department's proposed "Supplemental Program Guidance." Notably, there was no guidance proposed for the unsuitability criteria, and we understand that the Department has now decided not to issue such guidance. Furthermore, we are not aware of any data standards being developed by the BLM for coal planning. At present, it appears that BLM has decided, instead, to leave all such standards to the subjective judgment of the Regional Coal Teams. As noted in our discussion of the RCT's below, this is inappropriate.

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Federal coal leasing, these areas may satisfy new leasing requirements for the next decade or more.

In addition, the Department is considering as one option in the DEISS the elimination of all or some coal production regions. The proposed action specifically excludes leasing outside of the coal production regions from the RMP requirement. Therefore, the RMP policy may ultimately not apply to any new leasing.

The Department must comply with FLPMA. It is now nine years since the passage of FLPMA, and there is no reasonable argument for the lack of quality Resource Management Plans. The Department should comply fully with the findings of OTA, and incorporate into its regulations a prohibition on leasing outside of areas covered by RMP's.

8. Data Improvements

The Department's response also ignores the OTA suggestions for improving data and data analyses which are essential to both land use planning and activity planning. OTA recommends:

The data and analyses that support planning and leasing decisions also must be improved before environmental risk can be reduced and public confidence restored.⁷⁴

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The Office of Technology Assessment's Report also critiques this leasing for reserves methodology in detail.⁷⁶ OTA indicates that these methodologies "have resulted in continuing pressure to offer more coal for lease...."⁷⁷ Yet, the Department proposes to continue to employ these methodologies without any significant change. It, therefore, has failed to respond to one of the most significant criticisms of the OTA Report.

V. The proposed policies and procedures for determining leasing levels have significant legal and practical flaws.

A critical decision delegated to the Regional Coal Teams is the determination of leasing levels. The proposed action would provide the RCT's with several "market analyses," and rely upon their judgment to determine future leasing levels. The RCT recommendation will be received by the Secretary of the Interior as "a rebuttable presumption." (DEISS pg 70) which will be accepted "unless acceptance is not in the public interest."⁷⁸

Both the Linowes Commission and the OTA Report criticize the leasing levels decisions of the Interior Department. No

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C. Leasing Levels

The OTA Report, like the Linowes Commission Report, identifies high leasing rates as a significant problem. OTA found that:

When BLM was not able to comply fully with regulatory requirements, the primary cause was time constraints resulting from high leasing rates -- the combination of inflexible lease sales schedules and a substantial increase in the number of tracts to be evaluated for each sale.⁷⁴

BLM's own Review supports the OTA conclusion. The case studies demonstrate that planning in New Mexico was undermined by the unexpectedly large area proposed for leasing, and that the Colorado State Office was unable to complete an adequate mitigation analysis "due to time constraints."⁷⁵

However, the leasing methodologies employed by the BLM in the past will continue to be used in the future, under the proposed action. As we have noted in our previous communications (NWF letter of January 5, 1985 to Assistant Director Sokoloski, attached), there is virtually no difference between the methodologies developed to implement Secretary Watt's "leasing for reserves" policy and that outlined in the Appendix of the DEISS. The only alteration is that the title of the "inventory" methodology has been changed to "strategic supply."

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- 2) revise the "market analysis" by eliminating the "inventory" and "expressions of interest" methodologies.

Moreover, delegating this responsibility, by declaring that the RCT recommendation will be a rebuttable presumption, may well result in a less accountable process. The recommendations of the states have not received sufficient consideration in the past. In this regard, it is entirely appropriate and necessary for the states to be involved in the determination of leasing levels through the RCTs. And, doubtless the expert advice of the RCT is entitled to some considerable weight in the decision making process. However, the Secretary cannot legally delegate his ultimate decision making authority and responsibility. The RCT's are not formulated, nor can they be formulated, to meet the Secretary's obligations under such statutes as the Endangered Species Act, the National Historic Preservation Act, the Clean Air Act, and the other statutory bases for the Federal Coal Management Program.

The Secretary's Review of Planning Considerations in Federal Coal Leasing states that the leasing level "recommendations of the RCTs will be accepted by the Department

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specific changes have been proposed which indicate that the "leasing for reserves" methodology will be abandoned. The regulatory policy instituted by Secretary Watt remains unchanged. As a result, the "market analysis" methodology developed to institute the "leasing for reserves" policy remains essentially intact.

Delegating the authority to determine leasing levels is unlikely to result in any significant change from the ill-advised leasing proposals of Secretary Watt if the BLM's regulations, policies, and methodologies for determining leasing levels are not revised. The RCT's are predominantly comprised of BLM State Directors. They are obligated to follow the regulations and policies established by the Secretary of the Interior.

The regulatory and policy changes instituted by Secretary Watt and the methodology developed to implement his "leasing for reserves" approach must be changed directly. In particular, the BLM should:

- 1) repeal the regulatory policy of leasing to meet reserves, and restore a balanced approach based upon the projected need for coal production (taking into consideration uncertainties in future projections); and,

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The Office of Technology Assessment Report concluded:

First, the current program regulations provide insufficient guidance or standards for determining when data and analyses are to be deemed adequate. As a result, each participant in the leasing process applies his own standards of adequacy, which vary widely. Second, existing analyses of data adequacy often focus on whether a decision is supported by the data and research, not whether the supporting analysis is of high quality in its own right. Third, judging the adequacy of data raises the question of at what stage in the coal management program particular decisions should be made.⁷⁹

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cont.

The proposed new management program specifies no standards or criteria for measuring data adequacy. Instead, data adequacy standards are left to the "professional judgment" of the science advisors to the Regional Coal Teams.⁸⁰ This will merely perpetuate the problem, cited by OTA, of data adequacy standards varying from region to region.

The role of the RCT's data adequacy review, moreover, appears to be limited to determining whether adequate data exists to recommend a tract for leasing (activity planning), not whether adequate, quality data exists to meet the requirements of NEPA, FLPMA, the Endangered Species Act, or other relevant statutes. The Appendix, for example, notes the limitations on the RCT review:

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unless there is clear reason not to do so."(pg 3.) This is a policy which we support.

Finally, as the RCTs assume more influence in the conduct of the federal coal management program, it is important that they be required to involve the public in their deliberations. This means that the RCTs must not only be required to hear public comment, but they also must be obligated to consider and respond to that comment. To assure this, the BLM should require, by regulation, the Regional Coal Teams to incorporate into their leasing level recommendations to the Secretary specific responses to the public comments received during their deliberations.

VI. The proposed program fails to provide data adequacy standards for land use and activity planning.

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One of the most significant problems of the Federal Coal Management program has been data adequacy. Not only has data on the extent and quality of coal resources often been lacking on tracts proposed for sale, but data critical to land use planning and unsuitability determinations has also been missing.

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VII. The proposed program relies far too heavily on procedures and guidance rather than regulations.

Throughout the Appendix materials, the Department relies upon guidance documents and instructions to replace requirements which it repealed from the regulations in 1982. The coal management program as proposed in 1979 incorporated specific regulatory requirements for public participation, sequential screening, unsuitability criteria, and determining the adequacy of land use planning

The proposed program now proposes to replace these repealed regulations with guidance or instructions. This is inadequate. Each of these procedures is essential to the proper conduct of the coal management program. Public participation, land use planning adequacy, and unsuitability determinations are specifically required by law. They must be incorporated into the regulations governing the program, not left to "guidance" or Instruction Memoranda which can be changed without public notice, comment, or review.

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In the future, the RCT's will be required to more systematically use existing land use plans in identifying issues to be addressed and data to be gathered as part of activity planning. . . . (The RCT's will not evaluate the quality or technical adequacy of the RMP per se; this remains the responsibility of the State Director.)⁶¹

The limitation on the RCT's implies that this review does not substitute for the data adequacy standards called for by OTA and the Secretary's response to the OTA findings. No standards to ensure the "quality" or adequacy of land use planning data are provided in the proposed program.

In sum, the Department has clearly not resolved one of the most critical problems of the coal management program -- the need for data adequacy standards. The Secretary's response to the OTA Report directs BLM to "develop standards for data adequacy and guidelines for application of these standards."⁸² Yet, the proposed program produces no standards or guidelines, only a confusing set of "data adequacy" reviews by the RCTs which neither address nor resolve the fundamental problem.

29-8a The BLM should promulgate standards as OTA recommended. Such standards should address the data needs of both land use and activity planning.

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every element of the program identified -- roughly 85% of the principal program elements of the 1979 Coal Management Program.

In support of these changes, the Department has selectively conducted separate environmental assessments which uniformly conclude that the proposed actions will not result in a significant impact to the human environment. The four environmental assessments conducted by the Department are listed in Table 2-2 in the DEISS, and incorporated in it by reference.

This approach toward meeting the requirements of NEPA is wholly inadequate. As we have indicated to the Department previously, the EA's fail to comply with the law.⁸⁴ The findings of "no significant impact" are not supportable. The Department is obligated to prepare an Environmental Impact Statement which examines all of its significant programmatic regulatory and policy revisions, and reasonable alternatives to those proposed actions.

A single EIS on all key regulatory changes would not be simply a technical exercise. The purpose of such a complete analysis would be to identify specific alternative regulatory policies that might significantly reduce the environmental impacts of the coal management program. For example, the EIS might examine the need for new unsuitability criteria to

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VIII. The Draft Environmental Impact Statement Supplement is inadequate in several respects

The analysis presented in the DEISS has several significant problems. It fails to examine the extensive regulatory changes in the coal management program since 1979, its analysis of the need for new federal coal leasing has several flaws, and its environmental impact analysis is deficient.

A. Failure to analyze specific regulatory changes

The DEISS fails to comply with NEPA's requirements by not examining the significant regulatory changes implemented since 1979 in the Federal Coal Management Program. The Department of the Interior has changed almost every major portion of the federal coal management program as it was described in the 1979 FEIS. None of these changes are specifically analyzed in the DEISS.

Section 3.2 of the 1979 FEIS provides a "detailed description of certain components of the preferred program and its development."⁸³ It divides the federal coal management program into 11 elements. With the exception of "special leasing opportunities," which the Department has failed to implement in part, and "special start-up procedures," the Department has made or is now proposing significant changes in

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mitigate wildlife, air quality and groundwater impacts. It might examine whether different management approaches to federal leases might prove beneficial, including the administration of logical mining units or production requirements to meet diligence obligations.

The Council on Environmental Quality's NEPA regulations, binding on the BLM, specifically provide for the inclusion of "rules and regulations, and interpretations adopted pursuant to the Administrative Procedures Act" within EISs. 40 CFR 1508.18(b) Once an agency has decided to prepare an EIS it is obligated to "rigorously explore and evaluate all reasonable alternatives...." 30 CFR 1502.14(a) Moreover, "proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single environmental impact statement." 40 CFR 1502.4(a) The ill-advised decision of the Department to fragment its NEPA process on the coal program into an EIS and four EAs, violates each of these fundamental NEPA requirements.

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8. Failure to analyze due diligence policies

The DEISS also fails to consider the impact of changes in the 1982 regulations respecting diligent development, the changes being proposed through "guidance" for implementation of

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30 U.S.C. Section 202(a)(2)(a), and the guidance proposed for determination of "logical mining units" under 30 U.S.C. 202(a).

The 1979 FEIS specifically incorporated into its description of the proposed federal coal management program the policies for implementing the diligence provisions of the law. (FEIS pages 3-70 to 3-72). The 1979 FEIS specifically indicated that its assumptions regarding diligence were integral to its analysis of the need for new federal coal leasing (FEIS, Section 2.8, pages 2-48, et seq.)

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cont

The discussion of these changes in the DEISS is comprised of one sentence on page 78 which indicates the import of the 1982 regulatory amendment and a note in Table 1-7. This note discusses the rationale for the regulatory change in diligence requirements made in 1982. This is not the "detailed" treatment required by NEPA.

C. The Proposed Action and Alternatives:

The DEISS does not clearly distinguish between the proposed action and the "leasing by application" alternative. It is difficult to tell whether the latter alternative is significantly different from the "lease to satisfy industry's indication of need" alternative considered in 1979. The leasing procedures which would be followed appear to be

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essentially those outlined under this alternative in the 1979 FEIS. However, the potential environmental impacts which the FEIS identified in 1979 are not updated in the DEISS. For example, the 1979 FEIS indicates that this alternative would increase particulate emissions in the Powder River Basin by 50% over the preferred alternative (FEIS, pg 5-22), as well as result in increased game animal losses, sulfur dioxide emissions, water usage, and disabling accidents.

The Department must clearly define the "leasing by application" alternative, distinguishing it from the "leasing to meet industry's indication of need" alternative considered in the 1979 FEIS, and include an appropriate assessment of its potential impacts upon the human environment

D. Production Forecast:

The DEISS analysis of the need for new federal leasing appears to conclude that little, if any, new federal leasing is needed. The Production Forecast demonstrates that coal already under lease can meet all expected production needs for every coal region through the year 2000.⁸⁵ This contrasts sharply with the policy pronouncements of the Department in recent years.

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Both the DEISS analysis, and the Production Forecast Technical Report which was subsequently published, fail to analyze or forecast the need for federal leasing to "meet industry demand for reserves." Instead, they appear to analyze, and thereby justify, a leasing program intended to meet the need for production. We wholeheartedly agree with the policy of leasing to meet the need for production. However, since the policy of the proposed action is to lease to meet industry's need for reserves, that alternative must be analyzed in detail in the Department's EIS.

In general, the Production Forecast analysis is an improvement over the production analysis in the 1979 EIS. It takes into consideration some of the changes in the coal market in recent years. In particular, the decline in electricity consumption and the synthetic fuels industry are accounted for in this new analysis. The analysis is an aggregation of several analyses which examined the highest expected production from individual regions. However, the circumstances which result in high production in one region normally would be expected to reduce the production in others. The analysis does not take this effect into account.

Also, aggregating the production totals from separate analyses tends to over-state the total demand for federal coal in the federal coal regions. The DEISS should indicate the

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impacts the EIS presents a statistical analysis. Distinguishing between the impacts of each alternative in the federal coal regions is often impossible. Repeatedly, the DEISS indicates that "insufficient information" is available to make such distinctions in any meaningful manner. This failure to make meaningful distinctions is attributable, in large part, to the failure of the DEISS to examine these programmatic changes as part of its "proposed action."

impact multipliers

The DEISS also continues the use of "impact multipliers" which were used in the analysis for the 1979 FEIS. The use of impact multipliers tends to understate impacts and ignore potentially significant regional or area impacts. Various comments incorporated into the 1979 FEIS discuss and detail the shortcomings of this analytical approach. These criticisms are equally relevant to the DEISS.

impact mitigation

The another serious oversight of the DEISS environmental analysis is its failure to propose or consider alternatives for mitigating the significant impacts which it identifies. The analysis indicates that for recreation, socio-economic,

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results of the National Coal Model for each set of regional assumptions which are input, instead of presenting only the high results in each region.

The Production Forecast analysis also tends to underestimate the supply of federal coal from existing leases. As the DEISS indicates on page 94:

Where the BLM field staff revealed a range of possible mine capacities, the analysis used the lower end of the range to highlight and contrast the differences in environmental impacts of the leasing program alternatives in this supplemental EIS.⁸⁰

The only "contrast" which this approach "highlights" is one which makes a larger federal coal leasing program appear justified. This approach is patently unacceptable. The Department's EIS should incorporate a more detailed and thorough analysis of the production potential from existing federal, state and Indian leases and fee coal. This analysis should indicate, for each region, the range of potential production which is feasible including the high end of the range where "a range of possible mine capacities" exists.

E. Environmental Impact Analysis:

The discussion of the environmental impacts of the alternatives considered is uneven. For wildlife impacts, the document provides a narrative discussion, while for other

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wildlife, and paleontology resources, present mitigation requirements will not effectively preclude significant adverse impacts. The DEISS should develop and examine alternative approaches for mitigating these impacts as part of the alternative actions to be considered by the Secretary.

air quality

The air quality analysis of the DEISS is seriously deficient. It fails to recognize the air quality problems which several coal production regions are expected to encounter. In both the San Juan Region and the Powder River Region, state air quality standards are projected to be exceeded under the Department's regional coal leasing actions presently under consideration. For example, in New Mexico, the state Office of Environmental Compliance indicates that for all alternative leasing proposals DOI is considering, the entire air quality increment for particulates will be consumed.⁸⁷ The DEISS fails to consider these regional problems and the impact which the alternatives would have in changing regional coal production.

In addition, the results of the air quality analysis are presented in a practically unuseable form. The results are expressed in "tons per year," which is a completely different measure than used for air quality standards. The analysis

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cont makes no attempt to correlate its analysis with air quality standards, either state or federal.

groundwater

The Federation indicated, in its scoping statement, the growing problems of ground water quality in the West. We cited recent analysis by the USGS, which concludes that groundwater problems are expected to be serious for the Western coal regions. The deficient water impact analysis of the DEISS is, therefore, a major disappointment.

The groundwater analysis must be completely revised. The methodology involved assumed "urban supplies" of water for coal production. This methodology masks the potential water impacts which will be encountered in the federal coal production regions, since "urban supplies" of water are not likely to be available. Further, the analysis of aquifer contamination and its impact on the availability of water supplies is overly simplistic. The EIS states, for example:

Over the long term, mining would degrade water quality, but replacement water supplies could be obtained from deeper aquifers unaffected by mining.⁸⁸

This fails to recognize that disruption of one aquifer by coal mining can result in the degradation of water quality in

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29-25 represents that no soils have even "poor" reclamation cont. potential. The lowest rating the DEISS analysis gives to any soils in the coal regions is "fair." The DEISS should revise its soils analysis and incorporate a more realistic range of reclamation potential - from "unreclaimable" to "excellent" -- and provide a more representative examination of the demonstrated reclamation potential in the coal production regions.

29-26 Further, the soils and vegetation analysis assumes that "the function of the resource management plans and prelease review is to identify fragile areas and obvious reclamation problems to avoid leasing in areas where coal mining would significantly affect soil and vegetation."⁹² This, however, is not the case. The soils analysis should recognize that such "screening" is not effectively incorporated into the unsuitability review, nor does it appear to be accomplished elsewhere in the planning process. Therefore, the soil analysis of the DEISS understates potential adverse impacts.

wildlife

29-27 The DEISS analysis of wildlife impacts presents a fairly good narrative. However, it is difficult to determine what this analysis is based upon. The discussion of the

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29-23 other aquifers.⁸⁹ It also assumes an unlimited supply of deeper aquifers will be available and economical to supply water needs, without any documentation for this surprising assumption.

soils and vegetation

29-24 The soils and vegetation analysis fails to recognize that certain types of Western land and soil types have not been successfully reclaimed, to-date. The Badlands areas of New Mexico, for example, have serious reclamation problems and may in fact be unreclaimable. The Final San Juan Regional EIS describes these soils as:

shallow and poorly developed, and are considered to be unsuitable as a source of planting media by themselves. Sparse vegetation and barren areas are found on these soils, with natural fertility and organic matter very low. Soil textures are generally clays; restricted permeability, high salinity, severe erosion hazards, and excessive slopes are characteristic. Rough topography and deep drainage channels can be found in these areas.⁹⁰

The San Juan EIS also indicates that revegetation experience in the San Juan Basin has been limited, and its success is questionable.⁹¹

29-25 The analysis of the DEISS indicates that no soils in the federal coal regions are "unreclaimable." In fact, it

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analysis. The DEISS does not provide any quantification or analysis of non-federal coal sources as part of its production demand analysis. The DEISS fails to review the status of federal coal leasing outside of the existing federal coal regions. It should update the status of coal production and leasing in areas, such as Oklahoma, and indicate any relationship to the alternatives considered.

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IX. Conclusion

The management program proposed by the Draft Environmental Impact Statement Supplement for federal coal resources has serious shortcomings. Major improvements are needed to insure the protection of the environment and the receipt of "fair market value" required by law.

The National Wildlife Federation offers these comments in the hope that they will contribute to restoring a balanced and environmentally responsible coal leasing program.

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29-27 methodologies used in the DEISS does not reveal the method of cont analysis used for this section.

miscellaneous impacts

Other impact analyses have similar deficiencies. The agricultural analysis fails to recognize the importance of water to the agricultural community. The cultural resources discussion is seriously deficient and fails to recognize the regulatory changes of the proposed action which present significant impacts compared to the 1979 program. (see comments above on the unsuitability criteria.) The section on conflicts between coal development and oil and gas development fails to recognize the extent of conflicts which have already occurred. For example, the BLM's case study of the unsuitability criteria for Wyoming indicates that for "most of the lands within the planning unit had been leased for oil and gas. BLM determined that coal leasing would be deferred in producing oil and gas fields....."⁹³ Finally, the paleontology impact analysis fails to recognize that mining is not always advantageous to significant fossil sites.

Additionally, the DEISS fails to consider "down-stream" impacts of the alternatives identified. For example, the 1979 FEIS specifically considered impacts from mine-mouth powerplants, which are not incorporated into the DEISS

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CONSULTATION AND COORDINATION

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FOOTNOTES

- 1 In addition to the DEIS, the Federation incorporates comments on several other documents. These include A Review of the Unsuitability Criteria in Federal Coal Leasing, all regulations, guidance and instructions effecting the Federal Coal Management Program which have been published or noticed in the Federal Register during the consideration of this DEIS, and the Coal Production Forecast Technical Report.
- 2 These comments are intended to address both the draft impact statement and the proposals analyzed in that statement. We therefore request that these comments be made part of the Administrative Record of all actions and proposals discussed herein.
- 3 1979 Final Environmental Impact Statement, p. 3-31
- 4 1979 FEIS, p. 3-52
- 5 1979 FEIS, p. 3-32
- 6 1979 FEIS, p. 3-32
- 7 A Review of the Unsuitability Criteria in Federal Coal Leasing, p. v
- 8 San Juan River Regional FEIS, Comments by Southwest Resource and Information Center, FEIS p. 4-188, 189
- 9 Green River Hams-Fork Regional DEIS, p. 131-133
- 10 1979 FEIS, p. 3-40
- 11 Review, p. 36
- 12 Review, p. 35
- 13 Review, p. 38
- 14 Wetlands, published by the Corporate Conservation Council--National Wildlife Federation, 1984, p. 3
- 15 Wetlands Task Force Issue Paper (Appendix A), p. 4
- 16 U.S. Fish and Wildlife Service - Denver Office, letter from Assistant Regional Director to BLM Washington Office, Feb. 19, 1985
- 17 Review, p. 39
- 18 U.S. Environmental Protection Agency, comments on 1979 FEIS, EIS p. K-170
- 19 Fort Union Regional DEIS, July 1982, p. 85
- 20 EPA, comments on 1979 EIS, FEIS p. K-167
- 21 Proceedings of Powder River Coal Basin Round II
- 22 New Mexico Environmental Improvement Division, comments on the San Juan River Regional FEIS, March 1984, EIS p. 4-179
- 23 Review, p. 24

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APPENDICES:

- A. Wetlands Task Force Issue Paper, December 21, 1979
- B. Case studies on the application of the unsuitability criteria
- C. NWF comments of January 2, 1985 regarding the "federal coal program review information package"
- D. NWF comments of April 26, 1985 regarding the Supplemental Program Guidance to the Bureau of Land Management Planning Program Manual

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- 61 Compare tables 3-4 and 3-5 (p. 95-96) with figures 3-2a and 3-2e (p. 102-106)
- 62 Fair Market Value Policy for Federal Coal Leasing, Report of the Linowes Commission, Feb. 1984, p. 498
- 63 Linowes, p. 81
- 64 Linowes, p. 510
- 65 Linowes, p. 275
- 66 Linowes, p. 273
- 67 Linowes, p. 24
- 68 Compare A Guide to Federal Coal Property Appraisal (BLM, Feb. 1985) p. 56 to Linowes Commission Report, p. 273
- 69 OTA Report, p. 8
- 70 DEISS, p. 25
- 71 OTA Report, p. x
- 72 OTA Report, p. 74
- 73 DEISS, p. 25
- 74 OTA Report, p. 13
- 75 Appendix, 8-7
- 76 OTA Report, p. 60-64
- 77 OTA Report, p. 63
- 78 DEISS, p. 70
- 79 OTA Report, p. 13
- 80 DEISS, p. 415
- 81 DEISS, p. 403
- 82 OTA Report, p. 22
- 83 1979 FEIS, p. 3-13
- 84 National Wildlife Federation, Preliminary Comments: Federal Coal Program Review Information Package, (Appendix C), p. 8
- 85 Compare tables 3-4 and 3-5 (p. 95-96) with figures 3-2a and 3-2e (p. 102-106)
- 86 DEISS, p. 94
- 87 New Mexico Environmental Improvement Division, comments on San Juan River Regional EIS, p. 4-179
- 88 DEISS, p. 265
- 89 USGS Circular, p. 8
- 90 San Juan River Regional FEIS, p. 2-17
- 91 San Juan River Regional FEIS, p. 3-9
- 92 DEISS, p. 192-193
- 93 Appendix, p. 8-69

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- 24 EPA, comments on 1979 EIS, p. K-170
- 25 EPA, comments on 1979 EIS, p. K-171
- 26 Hydrology of Area 54, Northern Great Plains, and Rocky Mountain Coal Provinces, Colorado, and Wyoming, U.S. Geological Survey, Water Resources Investigations Open File Report 83-146, p. 8
- 27 Review, p. 39
- 28 Environmental Assessment of an Amendment to the Federal Coal Management Regulations, Modifying Unsuitability Criterion Number 7, May 1983, p. 13
- 29 Review, p. 62
- 30 Federal Land Policy and Management Act of 1976, 43 U.S.C. 1702, Sec. 202 (c) (3)
- 31 Review, p. 62
- 32 Review, p. 31
- 33 Environmental Assessment for Criterion 7 change, p. 6
- 34 Appendix, 8-10
- 35 1979 FEIS, p. 3-52
- 36 Appendix, 8-2
- 37 Appendix, 8-10
- 38 Appendix, 8-6
- 39 Appendix, 8-6
- 40 Appendix, 8-65, 69
- 41 Appendix, 8-27
- 42 Appendix, 8-40
- 43 Appendix, 8-40
- 44 Appendix, 8-46
- 45 Appendix, 8-70
- 46 Appendix, 8-10
- 47 Environmental Protection in the Federal Coal Leasing Program, Office of Technology Assessment, May 1984, p. 15
- 48 U.S. Fish and Wildlife Service- Denver Office, comments on DEISS, Jan. 1985, p. 2
- 49 Review, p. 69
- 50 OTA Report, p. 15
- 51 OTA Report, p. 27
- 52 OTA Report, p. 78
- 53 New Mexico Energy and Minerals Department, comments on DEISS, March 1985, p. 6
- 54 Appendix, 8-70
- 55 OTA Report, p. 105
- 56 U.S. Fish and Wildlife Service - Albuquerque, N.M. Office, comments on DEISS, Dec. 1984, p. 2
- 57 Montana Department of Fish, Wildlife and Parks, comments on DEISS, Dec. 1984, p. 2
- 58 DEISS, p. 403
- 59 Based on preferred alternatives in Draft and Final EIS's
- 60 See for example the Final San Juan River Regional EIS, p. 1-1

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 29

- 29-1-29-3c See responses to these comments in the Responses to Other Unsuitability Review Comments section at the end of Appendix 1.
- 29-4 The procedures under the Proposed Action would also be used for any activity planning already underway. For example, once regional coal teams (RCTs) begin to meet again, each will reexamine its regional leasing levels, including the market analysis used as a basis for the leasing level technical paper. The RCTs will also review data adequacy and either drop tracts lacking data or begin steps to obtain the needed data. The tract ranking and selections and the National Environmental Policy Act compliance document will then be reviewed, where resource management plans (RMPs) have been completed since the beginning of activity planning, the decisions in those RMPs will be summarized for the RCT so that their guidance to BLM and recommendations of the Secretary of the Interior will be consistent with the most recent land use planning decisions.
- 29-5 See response to Category 10, Linowes Commission Recommendations, in the Categorical Analysis of Comments section in this chapter.
- 29-6 BLM believes that the Secretary of the Interior's response to the Office of Technology Assessment (OTA 1984) and to BLM's proposals for implementing the Secretary's response fully address OTA's concerns. Resource management plans (RMPs) will be required for new activity planning starts. Although management framework plans (MFPs) will be used for current regional coal production region (RCR) for coal leasing outside a federal coal production region, BLM believes that these MFPs have been updated to comply with the spirit and intent of the Federal Land Policy and Management Act. Further, BLM has efforts underway to improve the scope and extent of the data base and is developing data adequacy standards.
- 29-7 See response to Category 11, Land Use Planning, in the Categorical Analysis of Comments section in this chapter.
- 29-7a The Department of the Interior believes that the proposed restructuring of the federal coal leasing program is fully responsive to OTA's major concern of offering too much coal for lease. Under the Proposed Action, market analysis will be a three-phase process. The first analysis will play a major role in the RCT's evaluation of the need to begin activity planning. This is a new program element that allows the RCT to recommend that leasing be delayed or deferred until markets improve. The regional market analysis, which employs the six methodologies referred to, is used along with other considerations and analyses by the RCT to recommend the regional leasing level, and formulate the leasing alternatives to be discussed in the regional coal EIS. The leasing level may be altered as a result of the presale market analysis that provides tract-specific information on market conditions. The last of the three-phase market analysis concept is also a new program element designed to evaluate current leasing needs and to prevent over-offering of federal coal.

In evaluating the market analysis components of the Proposed Action, the Department carefully considered comments received. Although the basic methodologies remain, several improvements will increase the reliability and utility of the analyses. One major change is the adoption of more detailed screening procedures for expressions of leasing interest. These procedures will reduce the potential for using frivolous or nonserious expressions in the expression of interest methodology, thus making the results of this methodology more useful and reliable. Expressions of leasing interest, however, is only one of six methodologies used in the regional market analysis.

In response to the comments, other key modifications and clarifications have been made:

- (1) RCT members have total discretion in the use of any of the provided information.
- (2) RCT members may request modifications to the inputs to analyses, including alternative runs of the National Coal Model and appropriate competition and strategic supply factors.
- (3) Further clarification is made that in all cases the market analysis is only one input into the RCT's deliberations.
- (4) The term algorithm has been removed from the regional market analysis paper.
- (5) In the regional market analysis, the strategic supply factor has been dropped from the equation in the contracting rate methodology.

The Department also points out the public participation opportunities in establishing the leasing level have been enhanced. Public participation calendars will be published early in activity planning, announcing key times and places for public involvement. The public will be given an opportunity to review the leasing level paper and to provide oral or written comments to the RCT.

See response to Category 4, Data Adequacy, in the Categorical Analysis of Comments section in this chapter.

In response to OTA (1984) recommendations to (a) decentralize decisionmaking authority and (b) provide guidelines and standards for assessing the adequacy of the data base, the Secretary of the Interior called for the appointment of science advisors as nonvoting members of each RCT. Thus the RCTs and BLM will be able to tap a high level of expertise. These advisors are expected to work closely with BLM state offices to become familiar with the preleasing procedures and to use their expertise in assisting the state offices and RCTs in establishing standards for data. Adequate data is highly important to activity planning in which tracts are eliminated or delineated and ranked for possible leasing. In many cases, data standards will be structured for activity planning and land use planning.

COMMENTS AND RESPONSES

29-8a See the discussion of data adequacy in Chapter 2 and the response to Category 4, Data Adequacy, in the Categorical Analysis of Comments section in this chapter.

29-9 The procedures referred to in this comment are required by law and by regulation. BLM disagrees only on where these requirements should be in the regulations. For example, land use planning adequacy is controlled by the 43 CFR 1600 land use planning regulations. To require land use planning adequacy also in the coal regulations would be redundant. Further, BLM is mandated to complete any procedure required by law, regardless of whether a regulation also requires it. The Department of the Interior believes that the existing and currently proposed rules are sufficient to comply with statutory requirements and that guidance documents and instructions are acceptable vehicles to ensure compliance with program requirements above and beyond those based on statutes. The guidance documents in Appendix 6 are not replacements for regulations issued in 1979 but advise BLM field personnel and the public on how those regulations operate.

Also see response to Category 3, Regulatory Procedures Versus Guidance, in the Categorical Analysis of Comments section of this chapter.

29-10 Table 1-7 lists the changes to the federal coal management regulations as a result of Secretary of the Interior Watt's regulatory review to eliminate excessive, burdensome, and counterproductive rules. The result was the elimination of procedural language and the revision of some rules. But these changes did not significantly change the nature of the program.

Other regulatory changes reinforced federal-state cooperation through more state consultations or resulted from court decisions, e.g., *NRA and Texas v. Andrus*. The proposed regulatory changes arising out of the Timmons and OTA reports (Timmons and others 1984; OTA 1984) would increase public participation, strengthen procedures for achieving fair market value for federal coal leases, and enhance environmental analysis of coal tracts being considered for sale. All of the regulatory changes in the program since 1979 were analyzed in environmental assessments, which resulted in findings of no significant impact.

29-11 See response to Category 1, Adequacy of the Supplemental EIS, in the Categorical Analysis of Comments section of this chapter.

29-12 See response to Category 9, Diligence and Section 3 Guidelines, in the Categorical Analysis of Comments section of this chapter.

29-13 The description of the Leasing by Application Alternative in Chapter 2 has been expanded to clarify its relationship to the leasing to meet industry's indication of need alternative in the 1979 FES (BLM 1979a). The impacts of Leasing by Application are discussed in Chapter 4 of the supplemental EIS.

29-14 See response to Category 1, Adequacy of the Supplemental EIS, in the Categorical Analysis section of this chapter.

29-15 This assertion is incorrect. The results presented for any one production level are consistent with that level, not aggregations of alternatives, as can be seen where high production in some regions (such as Green River-Hamm Fork) occurs when production is restricted in other regions by lack of federal leasing.

29-16 See response to comment 29-15.

29-17 The low end of production capacity estimates was used for impact analysis to avoid underestimating the potential impact. The expected impact would be between the extremes of the Proposed Action and the No New Federal Leasing Alternative and between the low and high production levels. The need for leasing probably lies somewhere between no more need and the high demand--No New Federal Leasing. True, there might be higher capacity than the low end of the ranges, but there might not be, and that potential must be assessed. This is the current best estimate of potential need for more leasing. Actual need will depend upon conditions that occur, but it will most likely be in the range of estimates in the supplemental EIS. Under the Proposed Action, more information will be available during activity planning to reduce the uncertainty. But for the supplemental EIS, only the broad range is analyzed.

29-18 The draft supplemental EIS used the same impact multiplier approach as was used in the analysis for the 1979 FES (BLM 1979a). The regional multipliers, however, were developed from regional coal EISs whenever possible (see Analytical Approach, Chapter 4, page 175, draft supplemental EIS), providing a sounder, more realistic basis for the 1985 multipliers. Though familiar with the limitations of this analytical approach, BLM believes that this approach provides reasonable impact estimates for program-level analysis.

29-19 If the Secretary of the Interior elects to resume a regional coal leasing program, impacts of leasing proposals (such as alternative combinations of tracts in regional leasing) will be analyzed in regional EISs. Measures to mitigate impacts will be applied in this process once tracts are selected.

29-20 Site-specific impacts cannot be predicted in a programmatic EIS but rather in more site-specific analyses that will follow. Moreover, under National Ambient Air Quality Standards (NAAQS) requirements, violations would not be allowed.

29-21 On a regional, programmatic basis, only total emissions can be estimated. Concentrations can be estimated on a site-specific basis only when lease locations are known.

29-22 The assumption refers to water used by the increased population. The coal-related population increase is assumed to occur in towns and cities rather than on farms or ranches. The text has been changed to make this clarification.

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- 29-30 The text has been expanded to better explain this conflict. The extent of the conflict would largely depend on the specific location of coal development, which is not analyzed in this supplemental EIS.
- 29-31 The draft supplemental EIS (pages 244-247) describes impacts as being either beneficial or adverse.
- 29-32 See response to comment 27-38.
- 29-33 The nonfederal coal in federal regions is included in the capacity estimates. In other regions and in the federal regions under the Proposed Action, the available reserves are derived from DOE/EIA's demonstrated reserved base (DRB) as documented. In the nonfederal regions more federal leasing is assumed not to be a critical factor, even though there may be leasing if allowed. Lack of leasing in these areas is expected to have only insignificant effects and no effect on each region's potential capacity.

- 29-23 Investigators have not found that degraded water quality has moved to lower aquifers. Although a statement that degraded water would not move to lower aquifers is premature for many decades, the geochemical model commonly accepted to describe the degradation process also predicts that degraded water quality will improve due to attenuating processes (dispersion, dilution, precipitation) as water moves away from the disturbed area. The draft supplemental EIS does not describe replacement water supplies as unlimited. Mine operators have usually found that enough water exists in deeper aquifers because in the rural mine areas promising water use is low. The draft supplemental EIS (page 260) states that deeper water wells would result in higher operation and maintenance costs.
- 29-24 See response to comment 15-2.
- 29-25 See Appendix 5, Reclamation and Erosion Control on Surface-Mined Lands. All inventories are an integral part of the permit review. They provide the basis for determining postmining land use, effective reclamation, and erosion control measures and for predicting reclamation success. Land disturbance impacts are discussed more generally in the supplemental EIS because specific sites to be mined and reclaimed are not known at this level of analysis.
- 29-27 No formulas or environmental computer simulations were run on the wildlife data. The impact analysis was based on impacts projected in regional coal EISs and in site-specific coal mine EISs. The analysis represents a cumulation of information from these and other sources.
- 29-28 See the Impacts to Water Resources section of the supplemental EIS for a discussion of the importance of water. This supplemental EIS analyzed only water for coal production, including water used at mine sites and by coal-related populations. The analysis determined that coal-related water use would not significantly affect agricultural irrigation.
- 29-29 The commenter is referring to the change in unsuitability criterion 7, publicly owned places on the National Register of Historic Places. This criterion was changed in 1983 (effective January 1984) to conform to the Surface Mining Control and Reclamation Act. When the Department of the Interior proposed that rulemaking in 1983, an environmental assessment. The assessment found no possible effects on the human environment. The assessment found no potential environmental impacts of the change in the criterion, and the Department prepared a finding of no significant impacts. The impacts of the Proposed Action on cultural resources analyzed in the draft supplemental EIS are based on unsuitability criterion 7 now in effect. The Department is not now proposing any more changes in this criterion.

SIERRA CLUB



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May 9, 1985

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May 8, 1985

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RE: Federal Coal Management Program, Draft Environmental Impact
Statement Supplement, February, 1985.

Dear Mr. Edwards,

Please consider these comments as supplemental to the comments offered to the Department on behalf of the Sierra Club at the recently completed public hearings, as well as any written comments received from individual members of the Sierra Club or its various chapters and groups. Since these comments also include comments on the Department's Review of the Unsuitability Criteria in Federal Coal Leasing, they should also be considered to supplement comments received on that document from other Club entities.

Although the DEISS does present important information concerning the current state of the coal market, it does not, in our opinion, form an adequate basis for analyzing the current programmatic revisions contemplated by the Department, nor does it adequately address the environmental implications of the new proposed program. In addition, it omits any analysis of important aspects of the suggested program changes, such as the proposed guidance on the

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enforcement of Sec. 3 of the Federal Coal Lease Amendments Act, which have a direct bearing on the need for further new leasing. He agrees with the major new conclusion of the DEISS, that: "Current analysis reveals that a policy of no future coal leasing would probably not cause a nationwide coal shortage. (p. 29). The market analysis supporting this conclusion embodies a significant, if belated, contribution to the ongoing debate over the wisdom of undertaking massive new leasing at this time. Reading this section of the DEISS, it is difficult to avoid the conclusion that no new leasing is needed at this time. In fact, the contrary decision of the Department, to continue a program of leasing new production coal, in addition to by-pass, emergency, and maintenance leases, will basically make itself felt by shifting coal production from one region to another, rather than by increasing total production levels.

Although DOI asserts that it examined all feasible and reasonable alternatives to the proposed program, this is clearly not the case. For instance, the alternative of allowing necessary maintenance and emergency leasing, but withholding further new leasing until a specified future date, or until the market demand picture changes appreciably, was not examined, even though such an alternative was explicitly examined in the 1979 FES. The FES examined the option of no new leasing until 1985, and the DEISS asserts that this option is now analyzed as part of the no leasing alternative. However, a more constructive analysis would have set a new future date, or market threshold, when leasing could be resumed, and analyzed the implications of such a reasonably conservative approach.

The DEISS also fails to examine any programmatic alternatives to the continuation of new production leasing through the proposed program. Such alternatives, including the alternative of basing regional leasing levels more closely on estimates of demand for production, should and could have been analyzed in comparison with the proposed action.

The proposed action delegates important new responsibilities, in the view of the Department, to the regional coal teams. Yet the DEISS fails to discuss how the accountability of RCI decision-making is to be assured within the guidance and regulations of the new program. RCI responsiveness to public participation has been a key concern in the recent history of the program: to the extent that the RCI's now hold new responsibilities, provisions for public accountability of RCI deliberations and decisions are all the more important.

The Sierra Club applauds the decision of the Department not to promulgate key elements of the new program until the public comments on the DEISS have been reviewed and responded to. However, although the Department solicited earlier comment on various of the proposed program changes, very little of this comment is reflected in the program proposed in the DEISS. Specific suggestions made on behalf of the Sierra Club and other conservation organizations to improve

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 30

- 30-1 The Department of the Interior sees no purpose in selecting an arbitrary year in which all competitive leasing might resume. Such a decision would have to be a matrix of dates and conditions by region. All subject to dynamics that can only be evaluated once the Secretary adopts a program. The Proposed Action provides for resumption of the basis of market analyses, as is explained on page 64 of the draft supplemental EIS. The suggested alternative of allowing needed maintenance and emergency leasing only is essentially the same as the Preference Right and Emergency Leasing Alternative discussed in the draft supplemental EIS. PRILAs are considered in all EIS alternatives except No New Federal Leasing because the Department is legally obligated to process the remaining PRILAs. The explanation of alternatives considered but not chosen has been expanded in Chapter 2.
- 30-2 See response to Category 2, Leasing Levels, in the Categorical Analysis of Comments section of this chapter.
- 30-3 See response to Category 6, Regional Coal Teams, in the Categorical Analysis of Comments section of this chapter.
- 30-4 Where substantive comments were received, the comments were reviewed, analyzed, and, if appropriate, changes were made to the draft procedures for conducting regional market analyses. These procedures were developed over several years in close coordination with the affected state governors' representatives. Many opportunities for public comments were provided. The regional market analysis would be considered along with other factors by the RCI and Secretary of the Interior in formulating the leasing level for analysis in the regional EIS. These other considerations include land use planning issues, coal and other resource information, environmental issues, concerns raised by governors, and other pertinent information.
- The regional market analysis provides a tool to analyze leasing options on the basis of objectives. The following are objectives: maintaining stable market participation, promoting competition in the coal industry, and providing leasing opportunities to meet alternative interpretations of the markets' need and demand for coal reserves. Threshold considerations were proposed as an objective for inclusion in the regional market analysis. This objective is not a market consideration and is thus not included in the regional market analysis but is considered with other factors in setting leasing levels. Other objectives, such as promoting more economically and environmentally desirable patterns of coal development, are also considered in establishing a leasing level, but these objectives are also not included in the regional market analysis.
- 30-5 An enhanced discussion of the unsuitability criteria has been added to the Proposed Action section of Chapter 2. Background material has been included in Chapter 1.

30-4 the "algorithms" through which the RCI's are expected to set leasing levels have been largely ignored. The current proposal for market analysis appears heavily weighted in favor of high leasing levels, as were previous drafts.

30-5 The discussion of the Department's handling of the "lands unsuitable" process in the DEISS is wholly inadequate, and is not much helped by the companion Review. The Review largely ignores the chronic problems with the application of the unsuitability petition process, and glosses over many of the key issues raised by OIA and other observers concerning the application of the unsuitability criteria themselves.

30-6 Although the DEISS clearly demonstrates that the proposed action would cause significant regional shifts in coal production patterns, it offers no evaluation of the potential environmental and social impacts of such shifts. For purposes of BLM's analysis, the West would appear to be one vast and homogeneous geographical and socio-economic unit. BLM's conclusions, in the DEISS and in earlier environmental assessments, that the proposed action involves no significant environmental impacts are only supportable at an unrealistic level of abstraction. The DEISS deliberately deals at the level of aggregate, west-wide, quantitative impacts, and fails completely to attempt the assessment of the region-specific impacts which it admits are likely to be the most significant consequences of the proposed decision.

30-7 In conclusion, the DEISS is inadequate to its purposes under NEPA, because it omits consideration of important elements of the proposed action, fails to examine reasonable programmatic alternatives to the proposed action, fails to consider the specific impacts likely to be caused by the proposed action, and misrepresents and downplays the problems experienced in implementing key environmental parts of the current program. The DEISS should be revised to remedy these defects, and be reissued for public comment, before any element of the proposed program is put into effect.

Thank you for considering these comments.

Sincerely,

Brooks B. Yeager,
Washington Representative

COMMENTS AND RESPONSES

30-6 Potential environmental and social impacts of regional shifts in coal production under the Proposed Action and No New Federal Leasing are evaluated in Chapter 4. The analyses presented in the comparative analysis in Chapter 5 (Table 5-1).

Information presented in the Affected Environment section of Chapter 4, especially under Socioeconomics and Soils and Vegetation, portrays regional differences, underscoring that the West is not "one vast and homogeneous geographical and socioeconomic unit." The impact sections of Chapter 4 show the results of regional impact assessment by resource and alternative. These impacts are also summarized and compared by alternative in Chapter 5.

30-7 See responses to comments 30-1, 30-4, and 30-6.

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MAY 8, 1985

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RE: Comments on the 1985 Draft Environmental
Impact Statement Supplement for the Federal
Coal Management Program

Dear Mr. Edwards:

Enclosed are the comments of the Natural Resources Defense Council, Inc. (NRDC) on the 1985 Draft Environmental Impact Statement Supplement for the Federal Coal Management Program (DEIS).

Based on our review of the DEIS and related agency actions taken prior to and after its release, we have concluded that the Department has clearly failed to comply with the mandatory obligation imposed by the National Environmental Protection Act (NEPA) to develop its newest coal program "in tandem" with this impact statement. *Kleppe v. Sierra Club*, 427 U.S. 390, 400 (1976). As a result, the DEIS and its proposed action are fundamentally inadequate in four major respects.

First, the DEIS violates NEPA by presenting a set of changes that is essentially a fait accompli. Major programmatic changes that will significantly affect the environment were made in 1982 without benefit of an EIS, and a number of other key changes have been made since then. Second, the DEIS is inadequate because it does not adequately describe the changes that have been made or proposed, does not assess the need for new leasing, and does not give any meaningful consideration to alternatives to the proposed action. Third, to the extent that the newest program can be discerned from the DEIS, it fails to cure many of the deficiencies resulting from the changes rendered to the original program in 1982, and, moreover, includes a number of new elements about which we have serious reservations. Fourth, the DEIS does not adequately analyze the environmental impacts of the newest program.

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Mr. Jack D. Edwards
May 8, 1985
Page two

Thank you for considering our comments.

Very truly yours,

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COMMENTS OF THE NATURAL RESOURCES DEFENSE COUNCIL, INC. ON THE 1985 DRAFT ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENT FOR THE FEDERAL COAL MANAGEMENT PROGRAM

Johanna H. Wald Laura B. King

May 8, 1985

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leasing, and does not give any meaningful consideration to alternatives to the proposed action. Third, to the extent that the newest program can be discerned from the DEIS, it fails to cure many of the deficiencies resulting from the changes rendered to the original program in 1982, and, moreover, includes a number of new elements about which we have serious reservations.

Fourth, the DEIS does not adequately analyze the environmental impacts of the newest program.

A. The "Proposed Action" Evaluated by the DEIS Has Already Taken Place.

The release of the DEIS establishes new milestones in the history of federal coal management. For the third time in only six years and the fifth time in a decade, the DOI is again attempting to establish a new federal coal leasing program. To date, only one of its efforts, the one undertaken in 1979, has led to the establishment of a stable, broadly accepted program.

The current effort is the direct result of the Department's abandonment, in 1982, of the 1979 program and its adoption of a new, unbalanced scheme without adequate explanation, environmental review, or public participation. See NRDC et al. v. Burford, Civil No. 82-2763 (D.D.C., filed Sept. 28, 1982).

The 1982 changes provoked public outcry, Congressional hostility, and criticism by the Linowes Commission and the Office of Technology Assessment (OTA). In response, the Department has

These comments on the 1985 Draft Environmental Impact Statement Supplement for the Federal Coal Management Program (hereinafter DEIS) and proposed program changes are submitted on behalf of the Natural Resources Defense Council, Inc. (NRDC). A national, non-profit environmental membership organization, NRDC has long sought to improve the management of the nation's federal coal resources by the Department of the Interior (DOI) and its Bureau of Land Management (BLM).

Based on our review of the DEIS and related agency actions taken prior to and after its release, we have concluded that the Department has clearly failed to comply with the mandatory obligation imposed by the National Environmental Protection Act (NEPA) to develop its newest coal program "in tandem" with this impact statement. Kleppe v. Sierra Club, 427 U.S. 390, 400 (1976). As a result, the DEIS and its proposed action are fundamentally inadequate in four major respects.

First, the DEIS violates NEPA by presenting a set of changes that is essentially a fait accompli. Major programmatic changes that will significantly affect the environment were made in 1982 without benefit of an EIS, and a number of other key changes have been made since then. Second, the DEIS is inadequate because it does not adequately describe the changes that have been made or proposed, does not assess the need for new

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made some additional changes and now offers yet another new program. But the DEIS clearly reveals that the development of this latest coal program has not been integrated with the NEPA process and that the Department has yet to take the requisite "hard look" at key issues and available alternatives, including the "proposed action." In fact, most of the changes contemplated in the "proposed action" have already taken place. Thus, the Department has ignored the lessons of the past and has simply presented once again a federal coal program that is "the result of a decision apparently made long before and apart from the preparation of the Draft EIS." NRDC v. Hughes, 437 F. Supp. 981, 991 (D.D.C. 1977), modified 454 F. Supp. 148 (D.D.C. 1978).

As we have previously pointed out, the Department is obligated to integrate the development of its latest coal program with the review required by NEPA. See our letter of October 11, 1984 to Robert F. Burford responding to the scoping notice for this EIS. It is also required to postpone decisions about the program until after completing that review. See, e.g., NRDC v. Hughes, supra, California v. Bergland, 483 F. Supp. 405, 479 (E.D. Cal. 1980) aff'd in part, rev'd in part sub nom. California v. Block, 690 F. 2d 753 (9th Cir. 1982). That DOI, in developing its newest program, followed a piecemeal, ad hoc approach which violated both of these essential principles of NEPA law is abundantly clear from the DEIS, as well as other documents prepared by the agency before and since announcing it would be prepared.

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The Department announced its intention to prepare this EIS on September 4, 1984. See 49 Fed. Reg. 34976. But well before that date, the Secretary had "accepted and agreed to implement 35 of the [Linowes] Commission's recommendations," DEIS, p. 22 (emphasis added), and "made [changes] in response to" the OTA's criticisms, id., p. 15 (emphasis added), in such basic program elements as the process for determining the amount of coal to be leased, the timing of sales, the delineation of tracts, and public participation.

After announcing its decision to prepare this EIS, the Department:

- o Adopted a new, final Charter for the Federal-State Coal Advisory Board on October 2, 1984. Id., App. 2 at 308.
- o Issued draft rules and guidelines to implement program changes previously decided upon. See, e.g. 49 Fed. Reg. 43928 (October 31, 1984); 49 Fed. Reg. 44221 (November 5, 1984).
- o "Adopted" changes in the areas of concern reported by OTA "that [did] not require rulemaking" on January 5, 1985. DEIS at 27.

Even release of the DEIS has not caused the Department to alter its approach. Since that time, it has:

- o Proposed rules and guidelines to implement such important new features as royalty reductions, 50 Fed. Reg. 6062 (February 13, 1985); § 3 of the Federal Coal

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Leasing Act, 50 Fed. Reg. 6398 (February 15, 1985); land use plan standards for coal, 50 Fed. Reg. 10086 (March 13, 1985); and logical mining unit guidelines, 50 Fed. Reg. 14303 (April 11, 1985) -- proposals that are not even alluded to in the DEIS.

- o Determined that major changes in the unsuitability criteria and process, as revised in 1982, were not needed. DOI/BLM, A Review of the Unsuitability Criteria in Federal Coal Leasing (March 1985).
- o Formally published draft rules to implement new features of the "proposed program" which the DEIS supposedly analyzes, including the threshold concept and the call for resource information. See 59 Fed. Reg. 10508 (March 15, 1985).

In sum, the Department's actions reveal clearly that the development of its latest coal program has not been integrated with the EIS process. On the contrary, long before the DEIS was even released, the Department not only decided to alter "the [1982] program with the changes made in response to the Linowes Commission and OTA reports," DEIS, p. 15, but also took steps to implement its decision, steps such as issuance of the Federal-State Advisory Board Charter, which are concededly inconsistent with "alternatives" the statement purportedly considers. See, e.g., id. at 83.

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Nor can the Department rely on previous environmental analyses (EAs) to justify adoption of these changes prior to releasing this DEIS and completing the NEPA process. Adoption of a new coal program requires preparation of an EIS, not a mere EA. NRDC v. Hughes, supra; Kleppe v. Sierra Club, supra.

Moreover, the EAs prepared by DOI were patently inadequate. They are full of bald conclusions regarding the lack of effect the changes will have on, for example, regional production patterns as well as the environment. Many of those conclusions are, in fact, contradicted by the DEIS. See, e.g., DEIS at 5. In addition, the EAs wholly fail "to relate the new program to coal already under lease," NRDC v. Hughes, 437 F. Supp. at 991, the central issue in any NEPA review involving federal coal. Id. at 990. Finally, the EAs' purported reliance on the 1979 EIS for necessary analysis and information is unjustifiable since the Department has acknowledged that that statement is no longer an adequate basis for decision-making. See 49 Fed. Reg. 34976 (September 4, 1984).

That the Department's actions violate NEPA is clear. Just such an earlier effort to establish a new coal program was struck down precisely because that program "was the result of a decision apparently made long before and apart from the preparation of the Draft EIS." NRDC v. Hughes, 437 F. Supp. at 991. The instant EIS, like the EIS rejected by the Hughes court, fails to take a "hard look" at the proposed program, alternatives to it or at fundamental federal coal management issues.

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Not only does the DEIS fail to differentiate clearly the Department's newest program from the 1982 program, it also fails to provide a detailed comparative analysis of the changes made in the 1979 program. Indeed, the table in the EIS which purports to compare the 1979 regulations with the 1982/1983 rules, Table 1-7, pp. 29-30, fails to acknowledge key changes made in 1982, including adoption of a new and dramatically different leasing policy. It also mischaracterizes many of the changes that were made, including for example, those relating to surface owners. Still others, such as the drastic and unlawful restrictions on public participation opportunities that were adopted in 1982, have been totally ignored.

In sum, instead of providing the detailed explanation of the proposed program and comparison between it and prior ones that is necessary to permit impacts to be predicted, the DEIS provides a sketchy and superficial description which, in effect, ignores what the controversy over the 1982 program unquestionably proved -- that a coal leasing program involves more than just land use planning, activity planning, and sales.

C. The DEIS Fails to Determine Whether Additional Leasing is Necessary.

The DEIS fails to "relate the new program to the amount of coal already under lease." NRDC v. Hughes, 437 F. Supp. at 990. Instead, the statement specifically disclaims any intention of addressing that issue, noting that "[r]egional coal leasing since

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B. The DEIS Does Not Adequately Describe the New Program.

The Department is obligated to include in this EIS a detailed description of the coal program it proposes to implement. Indeed, the agency's first programmatic coal EIS was found inadequate in part on the ground that it failed to provide a full description of the program then under consideration, including, in particular, a description of how that program differed from the previous one. See NRDC v. Hughes, *supra*. That the instant DEIS also fails to satisfy this obligation is evident from its failure even to identify the leasing policy that will drive the new program, let alone explain how, if at all, that policy differs from the "leasing for reserves policy" that drove the 1982 program and was its most controversial feature.

Notwithstanding the fact that many of the program changes alluded to in the DEIS have been in place for sometime, nowhere does the DEIS systematically describe how the new program is intended to work and how it differs from the 1982 program. The description of the proposed action in Chapter 2 is presented in such general terms that it is virtually impossible to discern how the new program will operate in practice. At most, the operation of the new program can only be glimpsed by reading through the appendix, which presents in piecemeal and barely legible fashion some of the changes under consideration.

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reserves under lease," id. at 11, and bringing the amount of federal coal under lease to a grand total of 18 billion tons. Linowes, et al., Report of the Commission on Fair Market Value Policy for Federal Coal Leasing (February 1984, p. 68). In fact, the DEIS admits that there are no "immediate needs" for leasing, DEIS at 57. There is, moreover, little demand for production from existing leases, as evidenced, for example, by the coal industry's current efforts to have the Federal Coal Leasing Amendments Act of 1975 revised by Congress to permit coal companies to continue to speculate in, rather than produce, federal coal.

D. The DEIS Fails to Consider Meaningful Alternatives.

As we pointed out in our response to the scoping notice, NEPA requires the Department to analyze and consider a number of complete, detailed alternative programs for managing federal coal. The DEIS does not do so. Instead, it considers only one complete program -- the proposed action, and that only

31-7 superficially. The other options purportedly considered -- no leasing, leasing by application and preference right and emergency leasing -- are not independent programs. They are ways of answering only one of the questions a coal management program must answer: how much coal should be leased. At least one complete program alternative was suggested to the Department for consideration in the DEIS -- a "leasing for need" alternative --

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1981 ... may have satisfied immediate needs," and purports instead to address the need for a program to manage federal coal. DEIS p. 57. The Hughes court, however, has already established that the two issues are inextricably linked. Thus, that court held that NEPA requires the Department to address the question of the need, if any, for more federal coal to be leased in order to "provide the new program with its very raison d'être." 437 F. Supp. at 990.

The Department's obligation to address this critical issue is especially clear at the present time, not only because of the changes that have occurred since the 1979 EIS was issued, but also because of new information that has become available since then. Indeed, in announcing its intention to prepare this statement, the Department specifically acknowledged that "conditions forming the basis for the analysis in the [1979] document may have changed," as well as that "numerous changes have been made" to the coal program since then. 49 Fed. Reg. 34976.

In December 1981, the OTA issued a report, An Assessment of Development and Production Potential of Federal Coal Leases, which revealed that even then the amount of coal under lease was sufficient to satisfy reasonable demand for production for more than a decade. Since that time, the Department has leased 2.6 billion tons of federal coal, DEIS at 57, thereby satisfying the coal companies' need "to increase their inventories of federal

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31-7 and the Department's refusal to consider it was wholly
cont unjustified.

The "leasing for need" option that was suggested would have required the Department to abandon explicitly the policy of leasing for reserves and to adopt in its place a policy of keying leasing decisions to the need for coal production. In addition, it would have prohibited use of Management Framework Plans (MFPs) as the basis for leasing decisions and required adequate data to be available where necessary at the outset of planning. It would also have imposed stringent diligence and unsuitability requirements, including a reclamation criterion. Under this option, surface owners would have been afforded even more protection than under the 1979 program and public participation opportunities would have been enhanced through, *inter alia*, a requirement of Secretarial response to public comments. In short, the "leasing for need" alternative represented a comprehensive programmatic alternative to the proposed program. Moreover, since inasmuch as it incorporated features long advocated by numerous environmental organizations, western governors, the House Appropriations Committee and others, the "leasing for need" alternative was also eminently reasonable.^{1/}

^{1/} For your convenience, a copy of our response to the Department's scoping notice for this EIS and the outline of the "leasing for need" alternative that we submitted at that time is attached hereto and incorporated into these comments by this reference.

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The Department refused to consider this alternative on the grounds that it involved "implementation of a specific program component, not a separate program design alternative" and that "most of [its] significant points" were included in the proposed action. BLM, Decision on the Scope of the Supplement to the 1979 Final Environmental Statement for the Federal Coal Management Program, DEIS, App. 6 at 406. To the extent we understand the former reason, it is clearly wrong. As discussed above, the "leasing for need" alternative -- unlike the alternatives that were considered -- was a program alternative, not merely a "component" of such a program. Moreover, most of the features of the suggested alternative were not included in any alternative, including the proposed action, as is discussed in greater detail below.

E. The Proposed Action Does Not Resolve Many of the Concerns Raised About the 1982 Program.

Despite the fact that the DEIS describes the Department's newest program only in the sketchiest of terms, the description that is provided reveals clearly that it does not deal with many of the concerns raised by NRDC, other public interest groups, and the Office of Technology Assessment. These concerns include, first and foremost, the need for a leasing methodology that ensures against over-leasing. They also go to the composition and application of the unsuitability criteria, the use of inadequate land use plans for coal leasing decisions, the

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As we stated in previous comments, we question whether delegation of leasing level decisions to RCTs or individual governors is even legal. Congress has directed the Secretary of the Interior to determine how much coal should be leased, see, e.g., 30 U.S.C. § 181 as amended, and has not ordered him or her to accept gubernatorial recommendations on these issues. Cf. 43

31-9 U.S.C. §§ 1345(a)(c). In the absence of statutory authority to delegate leasing decisions to governors, the Secretary's commitment to accept such recommendations, except under extraordinary and wholly undefined circumstances, would appear to constitute an illegal abdication of his responsibilities. Indeed, only recently the top lawyers of DOI and the Department of Agriculture concluded that specific legislative authority was needed to permit delegation of decisionmaking responsibilities between these two federal agencies.

Assuming, nonetheless, that some degree of delegation to the governors is permissible, clearly the authority that is delegated must be circumscribed. In particular, the Department must enunciate the leasing policy and other criteria which RCT members will be expected to use in making decisions. Thus far, however, we have seen no indication that the Department intends to give any policy or other direction to the RCTs. Indeed, it appears that the Department intends to limit its involvement in the RCTs' decisionmaking to the preparation of market analyses. NRDC objects strenuously to this approach, not only because it

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weakening of diligence requirements, the ineffectiveness of procedures for obtaining surface owner consent, and the extended period for submission of mine operation and reclamation plans. The failure of the new program and the DEIS to deal with any of these problems is described below.

1. The New Program Lacks a Sensible, Balanced Leasing Policy and Methodology.

The foremost concern of NRDC and other environmental groups regarding the program established in 1982 by former Interior Secretary Watt was the inordinately high leasing levels that resulted from his "leasing for reserves" policy. As indicated above, the proposed action fails to address this fundamental issue. Moreover, while the market analysis contained in the DEIS

31-8 implies that the Department does not now plan to continue to lease coal at the excessive rate it did under the Watt program, the DEIS does not specify how much coal will be leased nor how the determination of leasing levels will be made. Evidently leasing levels will be decided by the Regional Coal Teams (RCTs), whose recommendations are to be accepted by the Secretary "except in the case of an overriding national interest or in the case that he accepts the advice of a state governor" DEIS at 72. But nowhere is it even suggested that the RCTs must adopt a more restrained leasing policy or that the Secretary will maintain a less aggressive leasing posture in determining what constitutes an overriding national interest.

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fails to ensure that RCTs' decisions will be based on rational social objectives, reached via systematic analysis, but also because the types of market analyses the Department intends to employ embody implicit policy objectives with which we fundamentally disagree.

The market analyses rely on six different algorithms developed by DOE to project coal leasing requirements. As has been pointed out on several occasions, these are the same algorithms that were first employed under the 1982 program. Thus, their reappearance now, as part of the new program, hardly reassures us that leasing levels will be any lower in the future than they were under the 1982 program. To the extent that these market analyses become the basis for the RCTs' decisions to maintain high leasing levels, the onus of responsibility has simply been shifted from the Department to the RCTs.

The other major concern of NRDC over the decision to turn over most of the leasing decisions to the RCTs is its impact on public participation. As we and others have pointed out in the past, the historical record of the RCTs' relationships with the public is abysmal. It is a grave mistake to increase the authority of these bodies -- which have demonstrated such a cavalier attitude toward public participation in the past -- without specifying in detail their obligations toward the public. The new RCT charter adopted in 1984 does not address this problem. In addition to providing for public comment at

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their meetings, the RCTs must also be directed to seek public participation before making decisions, to consider public comment in making decisions, to solicit public reaction to draft decisions, and, when the public's recommendations are not accepted, to explain why they have been rejected.

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2. The Deficiencies of the Unsuitability Criteria Have Been Left Largely Intact.

We have consistently raised three major objections to the composition and application of the unsuitability criteria. The first is the failure of these standards to include a criterion for reclamation. Second, we object to the Department's position regarding the applicability of the unsuitability criteria to already leased lands. Finally, we object to the Department's refusal to commit to the collection of adequate data with which to assess suitability of lands for coal leasing. None of these concerns is dealt with in the new program described in the DEIS or in the changes proposed in the separate document, A Review of the Unsuitability Criteria in Federal Coal Leasing (March 1985) (hereinafter "Unsuitability Review").

The absence of a criterion for reclamation has been a longstanding failure of the coal program, and the need for such a criterion has become much more acute with Departmental consideration of leasing large areas of land in the Southwest, where many questions have been raised about the likelihood of successful reclamation. We have pointed out on a number of

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occasions that the exclusion of a criterion for reclamation is a clear violation of the Surface Mining Control and Reclamation Act (SMCRA). See, e.g., NRDC v. Burford, supra. The

Unsuitability Review, in addition, identified some of the practical advantages of adopting a reclamation criterion:

A reclamation criterion would allow industry and government to focus on specific reclamation problems early in the planning process and, if needed, propose studies to resolve these problems before a specific area is leased.

[B]y postponing any consideration of reclamation until the later permit application stage before examining the reclamation issue, the SMA may run the risk of leasing an area without sufficient knowledge of the potential for successful reclamation.

Unsuitability Review at 36.

Despite these important advantages, however, to say nothing of SMCRA's language, the BLM decided not to adopt a criterion for reclamation. We fail to see how any of the reasons cited for this decision, see id., justify noncompliance with a statutory mandate or outweigh the overwhelming need for a criterion that will force a true assessment of whether an area can be reclaimed before it is launched onto the road toward coal development. Moreover, we believe that DOI's refusal to address this issue in the DEIS, and, in particular, to analyze the impacts of this decision and the alternative of having a reclamation criterion is wholly unjustifiable.

The second unsuitability issue that we have repeatedly raised involves the applicability of the unsuitability criteria

to existing leases. At best, the Department's position on this issue has been ambiguous since 1982, when it deleted the original regulatory provision requiring application of the criteria to these leases. Both the DEIS and the Unsuitability Review

perpetuate this ambiguity. Thus, while the DEIS states that the unsuitability criteria will be applied to existing leases under the new program, DEIS at 79, no regulatory revisions that would require this result have been proposed. Moreover, the

Unsuitability Review states that only those unsuitability criteria listed in SMCRA will be applied to existing leases, as a result of the decision in the Texaco case. Unsuitability Review at 9. We object to the Department's reliance on this

four-year-old, unpublished and legally flawed opinion that it chose not to appeal. In any event, we believe that the Department must require the unsuitability criteria to be applied to existing leases. We also believe failure to consider this issue in the DEIS violates NEPA.

The third concern which we have raised in the past to no avail in the newest coal program is the elimination of sites that are eligible for inclusion in the National Register of Historic Places from Criterion 7. The Unsuitability Review impliedly recognizes that eligible sites must be protected, but argues that they can be protected adequately without being specifically included in Criterion 7. See pp. 27-28. We disagree. Indeed, we believe that the Department's own case studies of the

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Evidently, the policy will continue to be "to carry land as acceptable for further consideration for leasing until there is data and analysis which warrants dropping the land from further consideration." Unsuitability Review at 44. There is no commitment during the unsuitability review to collect such data as are needed to determine whether lands should be carried forward, and there is not even a commitment to put an area "on hold" until adequate data can be collected. This policy represents a complete abdication of the Department's responsibility, under SMCPA, to make a sound determination during land use planning as to whether an area is suitable for leasing. The premise underlying the Department's position can be discerned in its discussion on the advisability of adopting a reclamation criterion:

[T]he unsuitability criteria are intended to be applied on the basis of existing or reasonably available information.

Unsustainability Review at 35. We have found no support for this premise in SMCPA or its legislative history. Moreover, it is now clear from the Department's own field studies as well as the OTA report that reliance on existing information effectively prevents the unsuitability criteria from fulfilling the function for which they were intended -- i.e., to ensure that only lands where mining is environmentally acceptable are leased.

31-14 According to the DEIS, the "BLM will prepare, in consultation with other agencies, data adequacy standards and

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31-12 unsuitability process demonstrate that even values that are com specifically identified in criteria are not being excluded from leasing.

The Department's main rationale for continuing to exclude eligible sites from the criterion appears to be a concern about workload:

Such an extensive listing process, if required, during land use planning has the potential for dramatically increasing the workload and time necessary to complete the planning process. Such an increase in workload should not take place.

Unsustainability Review at 27. But Congress did not instruct the Department to base its unsuitability criteria upon workload considerations. Rather, it has ordered the Department to consider, during land use planning, whether "historic lands" and "important historic ... values" are unsuitable. 30 U.S.C. § 1272(a)(3)(B). Consequently, eligible sites should be included in Criterion 7.

The issue of workload considerations brings us to our last major concern regarding the application of unsuitability criteria, and that is the matter of data adequacy. The determination of data adequacy and the policy on how to proceed with leasing decisionmaking when the data are inadequate to assess suitability were two of the largest criticisms of the 1982 program raised by the OTA in its report, Environmental Protection in the Federal Coal Leasing Program (hereinafter 1982 OTA Report). Unfortunately, neither the Unsustainability Review nor the DEIS proposes any solutions to these serious problems.

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3. The New Program Continues the Illegal Reliance on Inadequate Land Use Plans.

Under the proposed action, the Department will apparently continue to rely on Management Framework Plans (MFPs) as the basis for coal leasing decisions, despite the criticism from OTA and others of these plans. Thus, the DEIS refers to the recent "decision by the Secretary [which] would require that any new activity planning be initiated only for areas where a resource management plan (instead of a management framework plan) has been completed." DEIS at 73 (emphasis added). This decision completely disregards the fact that extensive activity planning in San Juan, Powder River and other coal regions has already taken place on the basis of MFPs, which were not subjected to any detailed standards for judging their adequacy, cf. 47 Fed. Reg. 33118, notwithstanding the demonstrated deficiencies of such plans and the differences between the procedures mandated by FLPMA and those by which they were prepared. See, e.g., American Society of Planning Officials, Improving the Bureau of Land Management Planning Process (May 1979); 1982 OTA Report, pp. 43-44.

Equally importantly, it also disregards the Department's evident intention to conduct new competitive lease sales in such areas in the future on the basis of "old" activity plans, notwithstanding the documented problems with those plans that resulted from the 1982 program's outrageously high leasing levels and inflexible sale schedules. See 1982 OTA Report at 66-68.

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guidelines." Id. This bald assertion simply will not suffice to dispose of so significant an environmental and management issue. Not only does this language suggest that members of the public will not be permitted to participate in developing the "standards and guidelines," in violation of the public participation guarantees of the Federal Land Policy and Management Act (FLPMA), it also suggests that, contrary to the OTA's specific recommendation, the Department does not intend to promulgate regulations governing the data issue. Cf. OTA Report, p. x. Nor does the EIS indicate when the promised standards and guidelines will be issued, whether they will address "all stages of the leasing process," as OTA also recommended, id., or whether they will be applied retroactively, to cure the severe problems detailed by OTA.

Evidently, the Department envisions the use of "science advisors" to help determine the adequacy of available data. NRDC has several concerns about this measure. First, it cannot be emphasized strongly enough that science advisors cannot substitute for the formal establishment of explicit standards and guidelines, which must be developed with full public participation. Second, the use of the standards and guidelines for data adequacy must be clearly specified. In particular, there must be a clear directive that activity planning will not proceed in the absence of data that do not meet the standards. Third, assuming that standards are adopted, we question the need for science advisors at all.

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The lack of any short term need for federal coal leases and the concomitant availability of time necessary for comprehensive, rational land use and activity planning make analysis of this planning issue an essential part of the NEPA review. Clearly the Department's refusal to consider this issue in the DEIS was unjustified.

Another problem with the 1982 coal program identified by the OTA is its failure to address threshold impacts during the environmental analysis process. NRDC is pleased that the Department is now proposing to require RCTs to consider the results of threshold analysis performed during land use planning. However, the Department has not yet dealt with the biggest obstacle to effective threshold analysis, and that is the lack of a clear definition of thresholds and uniform direction regarding their use. We therefore recommend that the Department convene a task force -- to be comprised of members of the public as well as other agencies, as it has previously indicated it would do -- to help develop a definition of thresholds and meaningful guidance for the concept's use by field offices. Furthermore, the formal regulations should be adopted as promptly as possible and should incorporate an explicit prohibition on leasing where thresholds would be exceeded.

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4. The New Program Would Further Illegally Discourage Production from Existing Leases.

In this newest coal program, the Department has continued its efforts to circumvent Congress's intent, in enacting the Federal Coal Leasing Amendments Act of 1975 (FCLAA), that all leases issued by 1976 be in production by 1986. These efforts, begun in 1982, are reflected in two major features of the new program: (1) retention of the 1982 regulatory provisions regarding diligence; and (2) the recently issued (undated) Draft Guidelines on Section 2(a)(2)(A) of the Act of February 25, 1920, as amended (hereinafter "Section 3 Guidelines"). We have serious concerns about the substance of both of these features. Moreover, notwithstanding their significance, the Section 3 Guidelines are not assessed or even mentioned in the DEIS, while no alternatives to the 1982 rule regarding diligence were considered.

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In 1982, the Department revised the coal regulations to delay the start of the ten-year "diligent development period" until "the effective date of the first lease readjustment after August 4, 1976." 30 C.F.R. §§ 211.2(a)(14), 211.2(a)(14)(i)(B). As we have pointed out repeatedly, this extension of the diligent development period constituted a flagrant violation of FCLAA's explicit requirement that "[a]ny lease which is not producing in commercial quantities at the end of ten years shall be terminated." 30 U.S.C. § 207(a). The extended grace period granted by the 1982 rule to coal companies to achieve diligence

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currently written and, in particular, from the Department's latest proposed definition of "commercial quantities." That is to say, a significant number of leases will satisfy the extraordinarily minimal standard that has been proposed in the Guidelines and their holders therefore will not be disqualified from receiving new federal leases. Under the liberal assignment rules proposed, moreover, the ability of these and other lease holders to speculate in new (to them) leases will be further enhanced. Indeed, the proposal to have the assignment of a lease restart the ten-year diligence clock opens the door for wholesale avoidance of the original intent of FCLAA. According to coal lease researcher James Cannon, 147 out of a total of 500 pre-1976 leases, or about 30 percent, have been assigned to new owners since 1976 and would thus escape having to meet the diligence requirements intended by Congress. If the Guidelines' proposed rule on assignments is adopted, what is to prevent most of the remaining leases from being reassigned in a frenzy of lease-trading?

Under the circumstances, we believe the Department's proposal to retain the 1982 rules on diligence and adopt the proposed Section 3 Guidelines unquestionably constitutes a major, environmentally significant federal action. Not only will significant amounts of already leased coal remain in the hands of coal companies, but, at best, only a limited number of the unsuitability criteria will be applied to those leases. See

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-- up to seventy years after issuance -- exacerbates one of the principal problems Congress intended to remedy through FCLAA: the lack of coal production from previous federal leases. See H.R. Rep. No. 681, 94th Cong., 2d Sess. 8, 14 (1975).

Moreover, even assuming the Department is correct in claiming that the original regulatory diligence provision had "a poor legal basis," DEIS at 30, a return to that provision is a reasonable option and should therefore have been considered. See, e.g., 40 C.F.R. § 1502.14(c). Rather than even consider closing this major loophole in the diligence requirements, however, the Department has decided in effect to expand it via the proposed Section 3 Guidelines.

Section 3 of FCLAA was intended to prevent speculative holding of federal coal leases and encourage production by disqualifying the holders of non-producing leases from obtaining new leases. See H.R. Rep. No. 681, *supra* at 15. DOI's proposed Section 3 Guidelines, however, will do little to accomplish that objective. Instead, they will discourage production by (a) requiring coal companies to do virtually nothing to avoid disqualification; (b) imposing virtually no constraints on lease assignments, a major vehicle for acquisition of federal coal; and (c) allowing the diligence clock to be reset if a lease is assigned to a new owner.

We understand that as many as half of the existing pre-FCLAA leases may benefit from the Section 3 Guidelines as

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particularly after as many as 20 years or more -- would undoubtedly be confirmed by numerous economists. At the very least, the Department is obligated to come forward with the information and analyses it relied on to establish the proposed rate as well as to submit these guidelines to a full NEPA review prior to taking further action on them.

5. The New Program Retains the Illegal Extension of Time for Submittal of Operation and Reclamation Plans.

Another respect in which the regulations adopted in 1982 exhibit the Department's excessively relaxed approach toward diligence is the extension of time permitted to lessees for the submittal of operation and reclamation plans. Under the original rules, an operation and reclamation plan was required to be submitted no later than three years after a lease was issued, as is plainly necessitated by Section 6 of FCLAA. The rules adopted in 1982 allowed this period to be extended by any period of time in which operations are "interrupted by strikes, the elements, or casualties not attributable to the operator/lessee." 30 C.F.R. § 211.22(a)(1).

We objected to this change when it was adopted, pointing out that is flatly inconsistent with the clear language of Section 6 of FCLAA. We also noted that the fact that Congress did provide an explicit exemption for "strikes, the elements, or casualties not attributable to the lessee" in connection with

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pp. 17-18 supra. Nonetheless, as indicated above, the Department has apparently wholly ignored NEPA in developing this proposal. Indeed, not only does the DEIS fail even to mention the guidelines, as we have noted, but no environmental analysis of any kind accompanied their release.

In addition, it appears that the new definition of commercial quantities is invalid. That new definition requires production of only 1 percent of recoverable reserves over a period of ten years -- thus dramatically extending the time during which leases can be held without penalty and virtually eliminating any incentive for meaningful production from them.

Obviously, this rule does not comport with the Congressional intent discussed above. Equally importantly, it clearly does not satisfy the test specified by the Department's Solicitor: i.e., that any "rate of production" that is adopted must

meet[] the test that production is "commercial" in the common sense of the word -- in amounts representative of serious, financially sound operation of the mine installed on the property. The standard you adopt must be reasonable in the relation it fixes between its time frame and the amount of production required.

Memorandum (M-36951) to Assistant Secretary - Land and Mineral Management, from Solicitor, "Subject: Section 2(a)(2)(A) of the Mineral Leasing Act of 1920," p. 10 (February 12, 1985) (emphasis in the original). That far more than the trivial amount of coal production specified in the proposed guidelines would be necessary to sustain a "serious, financially sound" mine --

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FCIAA's diligent lease development and continued mine operation requirements, see Section 6, codified as 30 U.S.C. § 207(b), demonstrated that such an exemption was not intended for submittal of operation and reclamation plans. The program described in the DEIS does not appear to undo the change made in the 1982 regulations, nor does the DEIS address the environmental impacts of this rule or any alternative thereto.

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cont

6. The New Program Fails to Restore the Required Safeguards Of Surface Owners' Rights.

Another protested feature of the 1982 regulations which appears to have been left unmodified by the proposed action is the regulation regarding burden of proof for establishing surface ownership. Under the 1979 regulations, the burden was on the Department to determine whether a surface owner was qualified. See 43 C.F.R. Subpart 3427 (1979). In contrast, the 1982 regulations established a presumption of unqualification, and require that surface owners provide proof of their qualification. As we have pointed out in the past, such a requirement is squarely inconsistent with Congress's express aim of providing full protection for surface owners. The proposed action does not cure this deficiency in the 1982 regulations, and the DEIS neither evaluates the impacts of its retention nor considers any alternative to it.

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F. Some of the Program's Proposed New Features May Harm the Environment.

We are concerned about the effect on the environment of several of the programmatic changes proposed in response to the Linowes report. These include the proposals to negotiate sales of coal leases, adopt a new exchange policy, and to increase the weight of economic factors in the delineation of tracts.

1. Negotiated Sales Are Likely To Lead To Over-Leasing.

The proposal to allow the Department to negotiate a price for federal coal was developed in response to the Linowes Commission's recognition of the fact that many tracts are of interest only to one bidder and consequently the Department cannot be assured of receiving fair market value through a competitive bidding process. NRDC is strongly opposed to the use of negotiated sales as a means of solving this problem.

Our opposition to the use of negotiated sales was expressed initially in our comments on the Linowes Commission's proposed recommendations, where we argued that such authority would give the Department far too much discretion and would allow the sale of leases no matter how poor the market for federal coal leases. Indeed, it cannot be said that the idea received overwhelming support from those attending the Commission's hearings. Several coal companies hinted at their opposition to the idea and former Department official Steven Quarles flatly denounced it as unworkable.

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2. The Proposed Exchange Policy Would Have Significant Environmental Impacts.

The DEIS fails even to acknowledge a major change under consideration by the Department designed to promote coal lease exchanges in areas where coal development is hindered by uneven ownership patterns. This proposal, which was first released last July, was roundly criticized by WORC in the letter cited above. We agree with WORC that the proposal, if adopted, would have significant environmental effects and therefore must be analyzed in an EIS. We find its omission from the instant DEIS unjustifiable.

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3. The Proposed Tract Delineation Factors Overlook Environmental Considerations.

The proposed tract delineation factors are intended to help increase interest in individual tracts and promote greater competition, as was urged by the Linowes Commission. While we support this goal, we caution that competition must not be enhanced at the expense of the environment. The proposed factors appear to embody a policy which gives equal value to or even favors promotion of competition over protection of the environment. We disagree strongly with such a policy. Environmental protection must continue to be one of the highest priorities, if not the highest, of the tract delineation process, and must not be subsumed by the desire to create more competitive tracts.

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The undesirable consequences of negotiated sales were

spelled out in a letter by Pat Sweeney of the Western Organization of Resource Councils (WORC) criticizing this proposal when it was first presented by the Department last July. As Mr. Sweeney pointed out, even if the Department has the best of intentions and can be counted on not to enter into politically motivated "sweetheart deals," it does not have staff with sufficient experience to negotiate fair deals for the government.

We also agree with Mr. Sweeney that the Department appears to want to negotiate sales primarily in order to accept prices lower than the estimated fair market value:

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[T]he Department seems willing to allow bidders to present information tending to lower the value of a tract, but make no provision for its negotiating team to secure information which either supports the initial estimate or raises it.

Letter of Patrick Sweeney to Steve Griles, August 28, 1984, at 18. The negotiated sales proposal in the DEIS has not been changed in response to this criticism, and we are therefore opposed to its adoption. While we recognize that limited competition for many tracts makes receipt of fair market value problematic, we urge the Department to put more resources into its own independent analyses of tract values and to hold firm to these estimates in accepting bids, rather than entering into negotiations.

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As we have emphasized here and elsewhere, the key programmatic change involves the policy for determining leasing levels. Since the proposed action does not even enunciate such a policy, it is not surprising that the DEIS provides no estimate of how much coal will actually be leased under the new program. Just as the Department must adopt an explicit, rational policy to guide the setting of leasing levels, it must also give an estimate in the EIS of what those leasing levels will be in order to identify the program's impacts.

The DEIS is seriously flawed by the lack of any meaningful analysis of impacts. While some quantitative assessment of impacts is provided in the tables in Chapter 4, the discussion is so general as to be virtually useless. For example, in the discussion of wilderness impacts, the DEIS states:

The impacts of outside sights and sounds on wilderness areas are difficult to determine without knowing exactly where future mining would occur. Some impacts might occur, but the type and significance of these impacts cannot be predicted without knowing the specific locations of mining and other details.

DEIS at 230-231. Thus is glossed over one of the main conflicts between coal leasing and the environment. There is no discussion of the fact that wilderness impacts have been a key concern in battles over past coal leasing decisions and will undoubtedly continue to be in the future. There is no analysis of the kinds of indirect ways in which coal development can impair wilderness values, such as deteriorated air quality, wildlife population

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G. The DEIS Does Not Adequately Analyze the Environmental Impacts of the Proposed Action.

As difficult as it is to discern from the DEIS exactly what program is now being proposed, it is even more difficult to guess from reading the DEIS what its environmental impacts will be. The DEIS contains no discussion of the extent to which key program changes are likely to have significant environmental impacts, contains no real environmental analysis, does not provide a meaningful comparison of the new program's impacts with those of the 1979 program, and does not evaluate regional impacts.

As we have discussed above, the Department has made or is planning to make a number of significant programmatic changes, which are likely to have identifiable environmental impacts.

These include the twice-changed policy for determining leasing levels, the changes in composition and application of the unsuitability criteria, the changes in standards for land use plans, and many others. While the DEIS purports to estimate impacts of various coal development levels in gross terms such as acres disturbed and water consumed, nowhere does it evaluate the impacts of the program itself. For example, what will be the impact of applying only certain unsuitability criteria to existing leases? Similarly, what will be the impact of not having a reclamation criterion? Even if the impacts of changes such as these cannot be isolated and identified in quantitative terms, they can certainly be discussed in qualitative terms, as we have done in these comments.

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numerical terms, such as tons of total suspended particulates, and appears to be derived completely from the lower development levels projected in the DEIS. No qualitative comparison is made of the differing environmental impacts under the two programs. Furthermore, no assessment of the impacts of the 1982 program is provided which could serve as the basis for comparison with those of the newest program.

Finally, the DEIS does not analyze the relative changes in regional impacts that will result from the new program. While it acknowledges that the proposed action would result in relatively larger production levels in the Fort Union, San Juan River, and Uinta-Southwestern regions, DEIS at 105, it does not evaluate the interregional shift in impacts that will result from this change. Compare, for example, the extensive discussion of regional impacts in the Final Environmental Statement, Federal Coal Management Program (1979).

H. Conclusion

We are greatly disappointed by the DEIS and the new program it purports to describe and consider. Despite our repeated objections, most of the programmatic changes allegedly under consideration were adopted prior to the preparation of this DEIS, in clear violation of NEPA. To the limited extent that the program described under the proposed action is comprehensible, it does not lay to rest our concerns about the 1982 program; rather,

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decline due to habitat disruption, disruption of views by coal mines and haul roads, etc.

Even in the discussion of reclamation, which is covered in a special appendix, there is no analysis of the environmental impacts that will result should reclamation prove infeasible. Rather, the appendix primarily consists of a succession of bland statements to the effect that if reclamation practices are carried out correctly, reclamation is likely to be successful.

For example,

The reclamation potential of the reconstructed soil and landscape is expected generally to be suitable if overburden and favorable plant growth materials are effectively used in soil reconstruction and land reclamation.

DEIS at 351.

Proper management of reclaimed areas will improve reclamation success.

DEIS at 353.

A strong compliance program is paramount in achieving effective implementation of reclamation techniques.

DEIS at 354. In light of the deficiencies with the Office of

Surface Mining's compliance program identified in NRDC's report, Still Stripping the Law on Coal (C. Johnson and E. Hildebrandt, 1984), the third generality quoted above is particularly misleading.

Other than in the summary, nowhere does the DEIS compare the impacts of the new program with those estimated to occur in the 1979 program. Even that comparison is provided only in gross

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it adds a number of new elements about which we are also concerned. We find the post hoc environmental evaluation of the new program a serious breach of NEPA requirements, the DEIS to be legally inadequate, and the new program to contain a number of illegal components. As a result, we do not believe that the Department has produced the stable, workable program it has been seeking since dismantling the 1979 program, its first and thus far only successful coal program.

RESPONSES TO COMMENT LETTER 31

- 31-1 See responses to comments 31-4 and 29-9 and the response to Category 1, Adequacy of the Supplemental EIS, in the Categorical Analysis of Comments in this chapter.
- 31-2- See response to Category 1, Adequacy of the Supplemental EIS, in the Categorical Analysis of Comments section of this chapter.
- 31-3
- 31-4 The Department of the Interior is not proposing a new program. The 1979 programmatic FES (BLM 1979a) is being supplemented mainly to update production and demand estimates. Procedural changes now being made are referenced. The framework of the Proposed Action is identical to that of the Preferred Program in the 1979 FES. The Proposed Action is described in Chapter 2. The text notes where changes to the existing program have been proposed. The changes were also noted in Table 1-5 (pages 23-24 in the draft supplemental EIS) and Table 1-6 (pages 25-26). Details of several changes were printed in Appendix 6 and have previously been offered for review outside the Department. The description of the Proposed Action in Chapter 2 has been expanded to show more clearly how the program will operate with the changes adopted or proposed since 1979.
- 31-5 Changes have been made to Chapter 1 in response to this comment.
- 31-6- See response to Category 1, Adequacy of the Supplemental EIS, in the Categorical Analysis of Comments section of this chapter.
- 31-7
- 31-8 See response to Category 2, Leasing Levels, in the Categorical Analysis of Comments section of this chapter.
- 31-9 See response to Category 6, Regional Coal Teams, in the Categorical Analysis of Comments section of this chapter.
- 31-9a The six methodologies defined in the regional market analysis are similar but not identical to those used as inputs into the Green River-Hams Fork and Powder River Round II leasing levels. As with the previous market analysis, these methodologies are only one input into the ECT's and Secretary of the Interior's deliberations on leasing levels. The Green River-Hams Fork Round II leasing level (500 to 700 million tons of federal recoverable coal reserves) was consistent with the market analysis results. The Powder River Round II leasing level (1.2 to 4.85 billion tons of federal recoverable coal reserves) was not based on the market analysis results but on other considerations that affected the leasing level decision. The regional market analysis simply provides decisionmakers with information to be considered along with other factors. Certain changes have been made to the regional market analysis in response to public comments. See response to comment 29-7a.

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- 31-20 See response to Category 9, Diligence and Section 3 Guidelines, in the Categorical Analysis of Comments section of this chapter. Also see Chapter 1.
- 31-21 The comment states that the new definition of commercial quantities (apparently referencing Section 2(a)(2)(A) draft guidelines) is invalid. The regulatory definition of commercial quantities is "1 percent of the recoverable coal reserves." The guidelines do not alter that regulatory definition. The comment further states that the "new definition [sic] requires production of only 1 percent of the recoverable coal reserves over a period of ten years--thus dramatically extending the time during which leases can be held without penalty and virtually eliminating any incentive for meaningful production from them."
- The draft guidelines proposed a maximum 10-year timeframe over which Section 2(a)(2)(A) producing in commercial quantities could occur, implementing the congressionally mandated 10-year holding period. The draft guidelines stated that this was one of several potential lawful interpretations, and comments were solicited on that issue. The final guidelines state that the lawful maximum time during which a lease must be producing in commercial quantities is appropriately established at 10 years. The guidelines, however, further state that the authorized officer may establish a shorter timeframe based on the circumstances of a particular federal coal lease or the phase (e.g., start-up vs. full production level) of a commercial mining operation. There is no prohibition of the Section 2(a)(2)(A) lessee-qualification extension. On or after August 4, 1986, if a federal coal lease has been held by the current lessee for at least 10 years and that lease is not producing in commercial quantities, the lessee and any affiliate cannot be issued any MIA lease.
- 31-22 The regulations in 43 CFR 3483.3 allow for an extension for filing resource recovery and protection plans (SLM's term for operation and reclamation plans) for public interest reasons. Extensions are an exercise of the Secretary of the Interior's general lease management authority.
- The environmental impacts of the rule change were considered in a 1982 environmental assessment with a finding of no significant impacts.
- 31-23 The Department of the Interior's rationale for adopting this rule change is addressed in the preambles to the proposed and final rule, published in December 1981 and July 1982. The Department stands by this rationale. No evidence suggests that the rule is illegal, unfair, or is being applied unfairly.

- The Department of the Interior has defined the objectives of the coal program and where appropriate, these objectives are captured to the degree possible in the regional market analysis methodologies. Not all objectives, however, are captured in these methodologies, which deal mainly with economic factors. For example, in addition to market analysis results, the decisionmakers must consider the regional socioeconomic threshold in establishing the leasing level along with noneconomic factors (see 43 CFR 3420.27).
- 31-9b The guidelines that will be developed by the Department of the Interior for RCT activities, if the Secretary selects the Proposed Action, would require specific public comment periods on RCT activities and products and would require RCTs to respond to public comments received on these activities and products. The expanded description of the Proposed Action in Chapter 2 states the public comment opportunities that would be provided.
- 31-10-31-14 See responses to these comments in the Responses to Other Unsuitability Review Comments section at the end of Appendix 1.
- 31-15 BLM agrees with the commenter's first two points and may eventually conclude that the third point is valid as well. As currently envisioned, science advisors will perform the following tasks:
1. assist in preparing and reviewing standards;
 2. help review reports and data to assure that standards are met; and
 3. aid in identifying data needs.
- 31-16 See response to Category 11, Land Use Planning, in the Categorical Analysis of Comments section of this chapter.
- 31-17 BLM will be developing a handbook for land use planning for the coal program in cooperation with the following agencies: Forest Service, Fish and Wildlife Service, Office of Surface Mining Reclamation and Enforcement, and other agencies as required. The handbook will include a section on applying thresholds. This concept was proposed for reintroduction into the coal leasing regulations in 43 CFR 3420.1-4(f) on March 15, 1985 (see Federal Register, Vol 50, No. 51, pages 10508-10510) as part of the proposed rulemaking in response to the OTA report (OTA 1984).
- 31-18 See response to Category 9, Diligence and Section 3 Guidelines, in the Categorical Analysis of Comments section of this chapter.
- 31-19 The comment states that the Department of the Interior's proposed Section 3 (a)(c) guidelines will do little to further the congressional intent of preventing speculative holding of federal coal leases and encouraging production by disqualifying the holders of nonproducing leases from obtaining new leases.
- Implementing Section 3 is an element of lease supervision that is included in each alternative analyzed in the supplemental EIS. Similar comments were received in response to the request for public comments on the draft Section 3 guidelines. A response to these comments was published in the preamble to the final guidelines, 50 FR 168, August 29, 1985.

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- 31-24 The Department of the Interior is studying the issue of negotiated sales to develop a position to present to Congress. The Department does not have the statutory authority to conduct negotiated sales, has not determined if it will seek such authority, and has not formed a position on recent proposals that would provide limited authority for emergency bypass leasing.
- 31-25 The Department of the Interior does not intend to seek out fee coal exchanges in checkerboard areas in the foreseeable future. Policy that has been issued and proposed amendments to that policy are designed to give guidance for processing nonfederally proposed fee coal exchanges. Also see responses to Category 12, Exchanges, in the Categorical Analysis of Comments section of this chapter and to hearing comment D-1.
- 31-25a The identification of tract delineation factors having the greatest potential for enhancing competition does not represent a policy that would subjugate the environment to increased competition. The factors represent guidelines and must be examined in context with other resource information to allow delineation of competitive tracts that can be developed consistently with existing laws and regulations.
- 31-26 Impacts of the Proposed Action in its entirety are assessed, not necessarily selected components. There are an infinite number of possible variations for specific components; it is neither feasible nor reasonable to analyze the impacts of all of these variations. Reclaimability has not been a part of the program as one of the unsuitability criteria, and it was not proposed in the draft supplemental EIS, whose purpose is to measure the impacts of Proposed Actions, not the impacts of items outside the Proposed Actions.
- 31-27 See response to Category 2, Leasing Levels, in the Categorical Analysis of Comments section of this chapter.
- 31-28 Many of the types of impacts you mention are valid concerns, but, as emphasized in the narrative, the level of analysis supported by this supplemental EIS is not intended to determine if such specific impacts would occur. As examples, air quality impacts are already regulated to a national standard by existing laws, and outside sights and sounds could be evaluated only if specific locations for new mining were known. Wildlife population decline resulting from disrupted habitat, as well, is a highly site-specific type of potential impact, which would depend on the type of wildlife and specific land area. Many of these concerns can be addressed only in regional and more site-specific evaluations.
- 31-29 See the revised discussion of surface-mined reclamation in Appendix 5--Permitting of Mining Operations. One of the findings that must be made before a permit is issued is that the applicant has shown in the permit application that reclamation can be accomplished under the reclamation plan (30 CFR 775.15(c)(2)).

- The results of studies, research, and experiences reveal that current reclamation objectives can be met when the reclamation effort is designed for site-specific need and when existing technology is used (Marten and others 1983).
- 31-30 The general comparison of the impact analysis in 1979 with the impact analysis in this supplemental EIS presented in the Summary and also in the Comparison with the 1979 Preferred Program section in Chapter 5 was derived from the lower coal production estimates, different scope, and different multipliers used for impact assessment. The 1982 program changes were not assessed because these changes have been incorporated into the Proposed Action.
- 31-31 Interregional shifts in the market shares under the Proposed Action are discussed in Chapter 3, pages 105-107 of the draft supplemental EIS. The relative changes in the regional impacts of the Proposed Action and the Preference Right and Emergency Leasing Alternative are compared with the No New Federal Leasing Alternative in Table 5-1.



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State of North Dakota
EXECUTIVE OFFICE
BISMARCK

GEORGE A. SINNER
GOVERNOR

June 20, 1985

Honorable Donald Paul Hodel
Secretary
Department of the Interior
Eighteenth and C Streets Northwest
Washington, D.C. 20240

Dear Mr. Secretary:

Since coal development is an issue of great social and economic importance to the people of North Dakota, the State of North Dakota appreciates this opportunity to comment upon the draft supplemental environmental impact statement to the Federal Coal Leasing Program. We would also like to comment upon the royalty reduction guidelines which were released recently.

COMMENTS ON DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

We are glad to see that the federal coal leasing program is about to get back on its feet. It is important, whether or not federally owned coal is in demand, to have a program in existence that can deliver that coal at the time it is needed. It is also important that this program exist to help ensure that the most economical coal underlying the least environmentally sensitive land be made available for leasing. Through a workable and stable coal program, federal tracts that are economically and environmentally superior to other federal or nonfederal leases can substitute for those leases. The program developed over the past two years is, in general, a workable program that the State of North Dakota can support. Our reservations on specifics come down to the issues discussed in the following sections.

DATA ADEQUACY

Adequate data for the evaluation of the environmental and economic character of coal tracts is essential and we support efforts that would encourage the development of this data for tracts under review for leasing. We are concerned, however, that data adequacy standards be regionalized or made on a site-specific basis. We would oppose the imposition of national standards to be applied at a site-specific

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level without provision for regional flexibility since those national standards will be either too cumbersome to be applied effectively or too loose to have any meaning. We encourage the Bureau of Land Management to delegate as many data adequacy questions as possible to the regional coal teams for their review and handling.

LEASING LEVELS AND THE NATIONAL COAL MODEL

In the past, the algorithms or methods used by the regional coal teams to assist in the setting of leasing levels contributed, in part, to a lack of public confidence in the coal program. Specifically, the inventory algorithm which was designed to meet industries' demand for reserves was a favorite target of critics of the coal program since it would recommend for leasing coal tonnage far in excess of recognized needs. The states, through their regional coal team representatives, have roundly criticized this method for forecasting demand. We are, therefore disappointed that this algorithm remains in current BLM working papers under the new name of "strategic supply".

In the same context of leasing levels, we urge that the Department make clear in writing that the regional coal teams can recommend other assumptions to be used in preparing runs of the national coal model. In Fort Union, for instance, future demand from synthetic fuel projects will not automatically show up in the coal model unless we request that those proposed projects be entered. We have had good cooperation on this matter in the past, but we would like to see the option of presenting alternative assumptions put in writing.

LEASING BY APPLICATION

Since it has been suggested that the Fort Union Coal Region be dissolved and that leasing be done by application, lease by application has become an issue of major concern to this state. While we recognize that leasing by application would be less expensive and less complicated for BLM to administer, we are concerned that under this alternative, the State of North Dakota would lose the involvement in the leasing process that the western states have fought so hard to achieve over the last four years.

If Fort Union were to use lease by application, we would want to see the regional coal team remain intact with authority to deal with the applications submitted for leasing. We would like to see the coal team involved in tract delineation, in the review of the environmental assessment or impact statement and in the final action on the application.

The coal team provides many opportunities for public participation. The team ensures that the leasing process is not done in the dark. We want to see the coal team have a substantive role in any lease by application process. If that means that regulation must be changed, then so be it.

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Honorable Donald Paul Hodel
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ROYALTY REDUCTION GUIDELINES

The State of North Dakota would like to review the documentation and justification of royalty reduction decisions, as this is of fundamental importance to our state and its people. The royalty reduction guidelines presented for review and comment are well presented and offer a basically workable method for dealing with royalty reduction requests. We are particularly appreciative that, once a preliminary decision is made, the Governor of the affected state gets a chance to comment on the decision.

We would suggest that more careful analysis be given in the guidelines to the appraisal of bypass tracts. It seems that, since a reduction is permitted in the case of a bypass, the decision to offer a reduction should be determined after consideration of the seriousness of the bypass threat. This would include an assessment of the cost of any coal outside of but adjacent to the bypass acreage that would not be mined. It seems to us that the guidelines are too loose on this question and provide a chance for a company to bluff BLM into offering the reduction.

CONCLUSION

As stated earlier, we are glad to see that the federal coal leasing program is about ready to resume. We recognize that nationwide coal demand is not escalating rapidly and that earlier projections of coal development for synthetic fuel projects have all but evaporated. Yet, we must have a sound, predictable, and environmentally responsible program in place so that we are ready, when needed, to resume leasing upon a larger scale.

The program you have presented in your environmental impact statement is a workable program. We are glad that the regional coal teams have an enhanced role in the new program and encourage additional reliance upon them. The coal teams and their collective body, the Federal-State Coal Advisory Board, are the mechanism that will bring a greater sense of accountability to the program and will foster greater communication between the citizens, the states, and the federal government.

Sincerely,

Leah A. Sinner
George A. Sinner
Governor

GAS:lk

cc: Jack D. Edwards, Bureau of Land Management, Denver, Colorado
Director, Bureau of Land Management, Washington, D.C.

RESPONSES TO COMMENT LETTER 32

- 32-1 See response to Category 4, Data Adequacy, in the Categorical Analysis of Comments section of this chapter.
- 32-2 The purpose of the strategic supply algorithm is to provide a leasing option that meets a particular objective--providing for industry's demand for a strategic supply of in-place coal. Under the formerly named inventory method, an inventory factor was calculated and used as part of the methodology. On the basis of the comments received, this practice has been significantly altered. In the strategic supply methodology, the RCT establishes the strategic supply factors to be tested. This methodology allows the RCT to document different leasing scenarios needed to meet different strategic supply levels.
- To the Department of the Interior's knowledge, the criticism of this algorithm has always been directed toward the method of calculating the level of the inventory (strategic supply) factor. The concept of determining industry's demand for in-place coal as one possible yardstick for leasing levels has not been greatly criticized. Even when the Department of the Interior was using the Department of Energy's production goals to establish regional leasing targets, a security factor was used to avoid the pitfalls of attempting to provide for leasing only enough coal to meet forecasted production needs. In effect, this security factor recognized the need to maintain surplus leased reserves as a cushion against possible higher demand levels.
- 32-3 The guidelines for the regional market analysis specifically call for Alternative National Coal Model (NCM) runs to be provided on request.
- 32-4 See response to Category 7, Leasing by Application, in the Categorical Analysis of Comments section of this chapter. Any changes in the status of regional coal teams would be made in full consultation with the Governors of the affected states.



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STATE OF NEW MEXICO
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TONEY ANAYA
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May 9, 1985

RN 1010

Mr. Jack D. Edwards
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555 Zang St., First Floor East
Denver, Colorado 80228

Dear Mr. Edwards:

I wish to express my appreciation to the Bureau of Land Management for their efforts in preparing the Draft Supplemental Environmental Impact Statement (SEIS) for the Federal Coal Management Program. We recognize that preparation of this document was a difficult task, and we wish to commend all the BLM personnel who contributed to its preparation. However, the State of New Mexico has several concerns about the draft SEIS. General concerns are set forth in this letter while the specific comments by individual State agencies are attached.

As we outlined in our comments at the scoping meeting held in Santa Fe on October 9, 1984, we believe there are four essential goals which the Federal coal management program must meet. They are: (1) the optimization of revenues, (2) stimulation of economic development, (3) protection from adverse environmental, socioeconomic, historical, and other development impacts, and (4) increased use of conservation practices and renewable energy resources. In reaching these four goals, we feel that there are several pivotal issues which the BLM needs to adequately address in the supplemental draft EIS. In addition, there is information in the draft EIS which tends to support erroneous conclusions. The following comments address some of these problem areas, along with our recommendations for improvements:

(a) One of the most important issues of concern to the State is the planning for the leasing of coal in light of the limited demand forecasts contained in Chapter 3. The availability of current excess electrical generating capacity in New Mexico and the projected early operational status of the Palo Verde (coal competing) Nuclear Generating Station will reduce the need for coal nine-month generating plants until the early to middle 1990s. The electricity demand is the real focal point of the coal model projections, realizing that metallurgical coal, export, industrial, residential and commercial coal usage plays a role. Therefore, the material presented in Chapter 3 of the SEIS provides a strong hypothetical case for terminating the coal leasing program entirely.

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The forecast, including data from the updated BLM Production Forecast Technical Report, under most scenarios reaches general conclusions that estimates of coal production in the San Juan River Basin under a "no new federal leasing alternative" is sufficient to meet demand needs through the year 2000. Therefore, one conclusion that could be drawn from review of the BLM draft SEIS coal production forecast is that the Federal Coal Leasing Program in this region could be abolished without creating any negative coal supply/demand impacts through the year 2000. We would urge, however, that no such conclusion be adopted by BLM. Rather, we believe that prudent planning should continue to ensure that new demand is met in a responsible, orderly and beneficial manner.

While the forecasts of coal demand may be accurate, based on energy and economic growth assumptions, with a key factor being the projected growth rate of competing nuclear generating capacity (uncertainty surrounds this industry) there is a continual need to reevaluate coal forecasts on a regional and national basis. Based on our own experience, there is considerable uncertainty in coal forecasting based on modeling which only approximates the "real world", particularly for the post 1990 period. To illustrate the uncertainty, the New Mexico Coal Market Study, published in early 1983, projects under certain scenarios that coal demand for New Mexico coal could be 68.9 million tons by the year 2000. The forecasts in the draft SEIS, under medium production levels, are 46 million tons per year. It would be naive to assume forecasts will be precisely on target. Therefore, we support the establishment of a sound leasing mechanism to provide for timely resumption of coal leasing if the coal forecasts are in error. The infrastructure and expertise should be in place in order to expeditiously respond to any unexpected demand increases. In essence, the coal leasing program does not require leasing but coal leasing requires a program. Without a leasing program state and federal expertise will be lost and initiating a new program could take years.

In addition, there may be a need to lease even when the aggregate does not indicate such a need. Competitive tracts may be more suitable for coal development than some existing leases with environmental or socioeconomic problems, or with transportation of a leasing program disadvantages. We support the maintenance of a leasing program designed to promote the most economically and environmentally desirable patterns of coal development.

(b) Another major concern of our State relates to land use planning. The lack of adequate and reliable data during the land use planning stage can defer major decisions to the post-leasing or pre-mining stage. It is difficult to ascertain what impacts will occur in any particular lease until the total application of the four leasing screens. It is essential that critical site-specific evaluations not be deferred to the late stages of the coal development process. BLM needs to ensure

CONSULTATION AND COORDINATION

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to participate. Public participation is absolutely essential to address issues and to gain public confidence and acceptability of the coal leasing process. We commend and energetically support the BLM's decentralization approach toward coal leasing issues at the local and regional level and we continue to encourage the concept of maximum participation by the public and local agencies in the decision making process to recognize and mitigate coal leasing impacts.

(e) Another inference that could be drawn from the draft SEIS is that a large segment of the leasing program implementation activities are scheduled for publication as guidelines, field instruction, or technical manuals rather than regulations. This approach will not allow for the federal agencies to be held accountable, nor will it allow for the legal challenge by states, the public, or industry if DOI/BLM fails to follow the prescribed procedures. In order to improve accountability, all critical aspects of the coal leasing program must be contained in appropriate regulations. Regulatory changes should be made where appropriate after completion of the final SEIS.

(f) Another subject of concern is our belief that diligent development is not adequately addressed in the supplemental EIS. Any weakening of the statutory diligent development requirements in order to maintain a viable lease, should be further addressed in the SEIS. The overall associated impacts that would result from such a policy change on federal coal leasing activities should be discussed in the SEIS.

(g) The State Highway Department remains concerned about increased coal hauling activity on New Mexico roads resulting in higher road maintenance repair costs as well as safety aspects of motorists confronting coal-laden trains traversing our at-grade road/railroad crossings. Detailed comments are enclosed but one salient point is that the State strongly supports coal movement by rail wherever possible.

(h) Finally, the BLM should seriously consider a retroactive application of the leasing criteria embodied in the SEIS to the San Juan round one leasing program. This approach would generate enhanced public acceptance, confidence, and fairness in the management of the federal coal leasing program in the San Juan Basin.

In conclusion, besides the issues discussed above, there are several specific technical issues within the draft SEIS which are questioned. These items have been addressed by several different State agencies and the individual comments of these agencies involved in the review of the draft SEIS are enclosed. In reviewing the attached comments, please feel free to contact the individual State departments for any details. These agencies may wish to have concerning their comments. In addition, these agencies are available to assist in any way possible to ensure that all issues are adequately handled in the final Supplemental Environmental Impact Statement.

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adequate and diligent land use planning since this aspect of the program is an essential underpinning of an environmentally sensitive and economically sound management program.

The BLM must ensure that all area planning functions are completed before leases are offered and that comprehensive and current resource management plans are in place to identify any potential adverse leasing impacts during the land use planning stage. Deferral actions based on insufficient or inadequate data in the applications of the four screens, which are integral to the planning process, should be the exception, not the rule. This managerial approach will ensure more comprehensive land use plans, allow for improved assessment of potential impacts and minimize the difficulties encountered downstream when application of certain sections specified in the screens are held in abeyance until later stages of the coal leasing process. The enclosed Environmental Improvement Division comments further amplify our concerns on the need for a comprehensive land use planning doctrine.

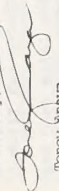
(c) The analysis of environmental and socioeconomic impacts in the supplemental EIS requires improvement. The no-leasing alternative is used as a baseline for analyses of the SEIS. The SEIS implies that since existing output capacity in coal supplies is expected to continue, production attributable to new federal leasing is not expected to continue, cause any environmental impact, but would merely replace existing production. This implies that the environmental and socioeconomic impacts from production of a specific quantity of coal are the same regardless of where the coal is mined. A fundamental purpose of the coal program is to select tracts for lease which present the least possible environmental and socioeconomic impact, so the draft SEIS should provide some analysis of the impacts from federal leasing, and not presume that it will be offset by cessation of mining on non-federal lands.

(d) Other concerns which we wish to point out at this time are the lack of voting representation for the Navajo Tribe on the San Juan River Regional Coal Team, and the need for increased public participation. Since the Navajo people and Nation are affected substantially by coal leasing in the San Juan Basin, they should be represented on the RCT. In the San Juan River Region, a major segment of coal development is on Navajo lands, and the tribe will experience most of the environmental and socioeconomic impacts. This issue should be addressed in Chapter 2, Activity Planning, SEIS. In addition, the BLM should also discuss in the SEIS the methods for providing more public participation in the early stages of the leasing process in order to improve the chances of identifying and eliminating problem areas at the beginning stage of the process. The SEIS states that public notice and opportunity to participate in the resource management plan will be appropriate to the areas and people involved which could be construed to mean that BLM can pre-select when it is appropriate for the public

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I would like to again take this opportunity to thank you and your staff for all the diligent work which has been given this Draft Supplemental Environmental Impact Statement. I also urge you to give serious consideration to our comments. I believe that if the State and the BLM work cooperatively on coal leasing, then we will be able to utilize New Mexico's vast coal resources in a manner in which the benefits will far outweigh the costs.

Sincerely,


Toney Anaya
Governor

LA:pm



STATE OF NEW MEXICO
NATURAL RESOURCES DEPARTMENT

Santa Fe 87503
(505) 827-7835

TONY ANAYA
GOVERNOR

LEO CRIEGO
SECRETARY

April 15, 1985

Mr. Paul L. Biderman, Secretary
Energy and Minerals Department
525 Camino de los Marquez
Santa Fe, New Mexico 87501

Dear Mr. Biderman:

In response to your request for input on the federal coal leasing program the Natural Resources Department staff reviewed both the Draft Environmental Impact Statement (DEIS) Supplement on the Federal Coal Management Program, February 1985, and the Review of the Unsuitability Criteria in Federal Coal Leasing, March 1985. After reviewing the documents we have the following concerns.

The National Environmental Policy Act of 1969 (NEPA) requires opportunity for public input and comment on land management policies. We question whether this requirement is being met. The report on the unsuitability criteria in federal coal leasing is not part of the DEIS. The unsuitability criteria are an important component of the leasing program and play a key role in determining whether a lease will be issued. They should be included in the DEIS for public input and comment, not published as a separate report. The DEIS does not respond to the findings of the Office of Technology Assessment (OTA report, 1984) or the Commission on Fair Market Value Policy for Federal Coal Leasing (the Linoves report, 1984). The DEIS states that "Recent changes to the coal program resulting from 1984 reports ... were analyzed in separate environmental assessments, and findings of no significant impact were made." We would like to read and review the environmental assessments (EAs) before concurring with the assessment that findings of no significant impact are a correct recommendation for the findings of the OTA and Linoves reports on the federal coal leasing program.

The real need for development of the coal is not adequately addressed. We certainly support the need for a well defined, responsive, long-range coal development plan that takes into

33-6

33-7

"The Natural Resources Department is An Equal Opportunity Employer"

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33-9 removed from T&E listing in 1977, but the DEIS identifies it as a
cont T&E species.

The descriptions of the resources are lacking in depth. They are often inconsistent and unrealistic. The agricultural description for the Unita-Southwestern Utah region indicates that the area is sparsely vegetated and has low forage production (10 to 22 acres per AUM). The description of the San Juan River region on the other hand consists of native rangeland used for cattle and sheep grazing with forage production from 10 to 30 acres per AUM. Both areas have the same level of forage production yet one area is considered to be sparsely vegetated and the other is identified as useful rangeland.

The adverse environmental impacts are not fully described and are treated in a broad general manner. The increased water impact in New Mexico due to mining is not adequately addressed. The DEIS gives the impression that the San Juan River Region has a sufficient supply of water for both the present demands and all future mining needs. This may not be the case since much of the water in the area is already committed to future uses. The paleontological resources of the region are not given their full significance. They are described only as a conflict with mining. No mention is made of their unique historical contribution to society in general.

In general the DEIS is lacking the substance it needs to serve as a useful management tool. The Unsuitability report is more specific but it too lacks the detail, substance and guidance needed to resolve management problems. We appreciate the concern of the federal government in wanting to manage its coal program in a responsible manner, however both the DEIS and the Unsuitability Criteria report lack the accurate, detailed guidelines required of a good management tool.

Sincerely,

Leo Griego

LEO GRIEGO
Secretary

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account all factors: socioeconomic, environmental, cultural as well as the economic need of the coal industry. The DEIS does not support the immediate need to develop coal, for example, "Current analysis reveals that a policy of no future coal leasing would probably not cause a nationwide coal shortage. The price... would probably increase. Without future federal coal leasing, coal will be developed to meet consumer demand, but it will be developed on coal tracts that have a higher development cost." (pg 59)

"Coal production in the western United States is constrained by a lack of markets and is therefore relatively unaffected in the aggregate by leasing levels." (pg 60)
"The dominant use of western coal is for generating electric power. The Department of Interior believes that it is in the national interest to lease enough coal to allow several potential suppliers to bid on new utility contracts." (pg 61)

The various alternatives in the DEIS do not represent well structured and responsible coal management plans. We would like to know why the DEIS for the Federal Coal Management Program is being released for comment when the process defining the coal program has not yet been fully determined. The proposed action makes reference to various regulations (1979, 1982 and proposed 1985) governing the coal leasing program. There should be one consistent set of regulations which is used to manage the program. The 14 diligence requirement does not appear to be adequate to promote responsible coal development. The Regional Coal Team for the San Juan River Region should have a Native American member. The comparisons in the DEIS are too broad to make meaningful assessments and decisions. We would like to review the Comprehensive land use plans required by the Federal Coal Leasing Amendments Act of 1976 (FCLAA) on the lands in the San Juan River Region containing coal deposits.

Overall the background data is dated and at times inaccurate. The Heritage Program staff and New Mexico Game and Fish Department staff state that the threatened and endangered (T&E) species listings for both plants and animals are not complete or accurate. The following species should be added: Atriplex pleiantha, a category I federal candidate and the roundtail chub, a state listed group II T&E species. The document states that the region is potential habitat for Sclerocactus mesae verdea. The cactus occurs in the region in Fruiland formations on BLM lands north of Waterflow NM. The DEIS lists the thick-billed parrot as occurring in the region, the last one sighted in extreme southwestern New Mexico was prior to 1920. The Mexican duck was

COMMENTS AND RESPONSES

New Mexico State Highway Department Comments on 1985 Draft Environmental Impact Statement Supplement Federal Coal Management Program

The following New Mexico State Highway Department comments concern the transportation effects of the 1985 draft EIS which supplements and revises the 1979 EIS on Federal coal management activity in the New Mexico San Juan River coal region. Although the projected transportation impact of the 1985 EIS is only 50% of the 1979 EIS impact predictions, the Department remains concerned about increased coal hauling activity on New Mexico roads as well as the impact upon New Mexico motorists of coal laden trains traversing our at-grade road/railroad crossings.

Major roads in the New Mexico San Juan River coal region (which comprises 12 New Mexico counties), include Interstate 40 and 25, US 550, 666, 57 and 371. Other public roads are state (NM 32, 44, 53/344, 57, 170, 197 and 509), county, and Bureau of Indian Affairs - maintained.

The travelling public is affected in several ways by coal hauled over these public roads: driving ease and comfort is diminished by large-load truck traffic, which accelerates road deterioration resulting in higher road maintenance and repair costs and ultimately requires additional funding for improvements. Therefore, the New Mexico State Highway Department supports coal transport by rail wherever possible.

In addition to the problems that heavily laden coal trucks cause to our roads and our bridge decks, the Highway Department is concerned about the at-grade railroad crossings which intersect New Mexico's roads. Railroad crossings which lack grade separation and which carry long coal trains cause delay and hazard to motorists. New Mexico's at-grade crossings should be reviewed in terms of any significant train traffic increase, and federal funding should be provided if necessary to separate the grade crossings.

For these reasons, the New Mexico State Highway Department encourages rail transport for any prospective increases in San Juan region coal activity.

CONSULTATION AND COORDINATION

STATE OF NEW MEXICO

OFFICE OF CULTURAL AFFAIRS HISTORIC PRESERVATION DIVISION

VILLA RIVERA, ROOM 101
228 EAST PALACE AVENUE
SANTA FE, NEW MEXICO 87503
(505) 967-6330

THOMAS W. MERLAN
DIRECTOR

April 9, 1985

MEMORANDUM

H-071

TO: Paul Biderman
Secretary, Energy and Minerals Department

FROM: Thomas W. Merlan
State Historic Preservation Officer

SUBJECT: Draft Environmental Impact Statement Supplement: Federal
Coal Management Program, February 1985

Thank you for requesting comments on the above document. Since the document is a very general overview of the entire coal management program, the following comments are also fairly general.

Historic preservation concerns with the federal coal management program focus on two primary areas:

- 1: that adequate consideration is given to both short-term and long-range impacts to archaeological and historic resources in planning decisions for coal development, and
- 2: that once decisions are made to lease and develop coal resources, development proceeds in compliance with all appropriate laws and regulations protecting cultural resources on both a State and federal level.

Pertinent laws and regulations include, among others, the National Historic Preservation Act, federal regulation 36 CFR 800 and the State of New Mexico Cultural Properties Act. There are also a number of agency regulations and memoranda of agreement which more specifically define procedures for cultural resource protection. Pages 233 to 235 of the DEIS indicate that development will proceed in accordance with 36 CFR 800.

The major deficiency with the proposed coal program is that the program does not generally give adequate consideration to long range cultural resource impacts, on either an environmental or administrative level, despite the magnitude of proposed development.

33-13

In terms of environmental considerations, the greater the magnitude of proposed coal development, the greater the impacts that may be anticipated to cultural resources. While the DEIS supplement indicates that cultural resources within coal mines will be treated in accordance with pertinent regulations and guidelines, there will be a number of associated developments that are essentially unregulated in terms of impacts to cultural resources. These include increased vandalism of major archaeological sites as well as site destruction associated with construction of new housing and commercial development and private or local road construction.

On an administrative level, the DEIS supplement does not consider the staffing requirements needed to administer the coal program at the proposed magnitude. This may be of concern to a variety of regulatory interests, but it is critical for cultural resources. There is not adequate staff on either a State or federal level at present to administer the cultural resource components of coal mine development.

Again, thank you for the opportunity to comment. If we can be of further assistance, please let us know.

33-14

COMMENTS AND RESPONSES

RESPONSES TO COMMENT LETTER 33

33-1 The supplemental EIS provides some analysis of program-level impacts from all land ownerships (federal, state, Indian, private), but does not describe impacts for each ownership. Although a fundamental purpose of the coal program is to select tracts for lease that present the least possible environmental and socioeconomic impacts, this type of analysis would not take place in the supplemental EIS but in regional EISs if the Proposed Action is adopted. The supplemental EIS does not analyze the leasing of specific amounts of coal or the leasing of specific sites (Scope, Chapter 4, page 121 of the draft supplemental EIS). Implementing the Proposed Action would not ensure that any of the impacts would occur, only that they or similar impacts might occur if more federal coal reserves are leased and developed.

33-2 BLM will reconsider its previous position on this matter.

33-3 Opportunities for public participation are listed and discussed in Chapter 2. Public participation would be encouraged during land use planning. When efforts are made to recognize and eliminate problem areas. In addition, each regional coal team is expected to build on this base in formulating public involvement procedures suitable for the unique issues and entities involved in each region.

33-4 See response to Category 3, Regulatory Procedures Versus Guidance, in the Categorical Analysis of Comments section of this chapter.

Nevertheless, all agency decisions can be challenged in court. The Department of the Interior has not in the past and will not in the future make major policy decisions concerning the coal program without allowing adequate opportunity for public comment and without fully considering all comments received. Regulatory changes will be made to implement decisions on the choice and structure of a coal program from among the alternatives described in the final supplemental EIS.

33-5 The supplemental EIS reflects the current regulatory situation. Easing the diligence rules may reduce the demand for new federal leasing, but it would not change the production forecasts under the Proposed Action. Under No New Federal Leasing, easing diligence rules might reduce production shifts that occur under that alternative. But that result would be in the range of the alternative production levels.

33-5a The Department of the Interior believes the existing updated management framework plans fully meet the spirit and intent of the Federal Land Policy and Management Act of 1976 and are, therefore, adequate to support a round I coal leasing effort in the San Juan Basin. The San Juan Regional Coal Team (RCT), however, will be required to review all aspects of the round I activity planning effort to assure compliance with all other program changes. This review will include an examination of the need for leasing in the region, a review of data adequacy, and, as needed, revision of the regional coal EIS to reflect the current program requirements.

33-6

BLM believes that opportunities for public participation, outlined in Chapter 2, are ample, especially with the opportunities to comment on the Proposed Action planning criteria (which specifically include the unsuitability criteria and other coal screens) and on the application of the unsuitability criteria. The unsuitability criteria themselves were subject to a review, which was released for public comment along with the draft supplemental EIS. The final supplemental EIS has been revised to clarify these matters. The environmental assessment (EA) on the Secretary of the Interior's responses to the findings of the Office of Technology Assessment is printed in Appendix 10 of this final supplemental EIS. A copy of the EA on the Secretary's responses to the Linowes Commission report has been mailed to the commenter's office and is also included in Appendix 10.

33-7

The purpose and need section addresses the need for a coal management program and not the need for coal leasing or coal development. The coal leasing and coal development needs are subjects that would be dealt with in the regional EISs if the Proposed Action is adopted. Chapter 3 of the supplemental EIS provides current and forecasted production and capacity figures as background information on the regional situation, not to establish a level of leasing needs.

33-8

The Proposed Action is a program that includes proposed procedural changes resulting from the recommendations and finding of the Linowes Commission (Linowes and others 1984) and the Office of Technology Assessment (OTA 1984). The alternative programs were derived from those in the 1979 FES (BLM 1979a). The program in the Proposed Action as defined in Chapter 2 involves only one set of coal management regulations (43 CFR 3400), issued in 1979, amended in 1982 and 1983, proposed for revision in 1984 and 1985, and all reflected in the draft supplemental EIS. The Department of the Interior believes that the 1 percent diligence requirement is adequate. Native Americans may participate on EISs as non-voting members, and full membership appointments are being evaluated.

The region-specific issues will be addressed locally once the Secretary of the Interior has made his program decision. For specific land use plans, please see the appropriate BLM state director (in this case, the New Mexico State Director).

Changes concerning these species have been made to the Soils and Vegetation and Wildlife sections of the final supplemental EIS.

These general descriptions, based on major land resource areas (MLRAs), provide adequate information for the programmatic level of analysis. The regional coal EISs will provide more specific resource descriptions. Both the Uinta-Southwestern Utah and the San Juan River Regions have sparsely vegetated areas. The range of forage production in AUMs expresses the general range of livestock carrying capacities.

33-9

33-10

CONSULTATION AND COORDINATION

- 33-11 The draft supplemental EIS (page 266) states that water in the San Juan River Region is fully appropriated and therefore not readily available for future use for coal mining.
- 33-12 Although the draft supplemental EIS (page 242) describes the known and potential paleontological resources of the San Juan River Region as significant and highly significant, the text in the final supplemental EIS has been changed to emphasize the uniqueness of the resource in this region.
- 33-13 Cultural resource standards for mining were first addressed in the 1980 Programmatic Memorandum of Agreement (PMOA) between the Department of the Interior and the Advisory Council on Historic Preservation. This PMOA is being revised to provide greater detail on standards for inventory and mitigation of effects to sites. BLM expects that these standards will be ready to be implemented in January 1986.
- This PMOA was prepared to protect cultural properties found as a result of activities relating to the federal coal program. Although not designed to address in detail every aspect of the program, this PMOA has provided a framework for compliance with Section 106 of the National Historic Preservation Act. In perspective, the document admittedly has certain strengths and weaknesses.
- This revised PMOA should remedy some of the problems relating to the lack of detail in the first agreement. Among other things, it will address two important program objectives. First, it will require that unsuitability criterion 7 and the multiple use trade-off screens be properly applied during land use planning. Second, it will clearly spell out that BLM has postlease administrative responsibilities to monitor and protect cultural properties.
- 33-14 Staffing requirements needed to administer the federal coal management program are not an appropriate item to consider in an EIS.

34

TAOS ENVIRONMENTAL ASSOCIATION



P.O. Box 6040
Taos,
New Mexico 87571

May 7, 1985

Mr. Secretary,

The Draft EIS Supplement for the Federal Coal Management Program is, as the Knowles Commission described the Program itself, "deficient in all its functions." The DEIS Supplement is inadequate and the Coal Program it promulgates is worsened, rather than bettered.

I will not belabor here the dotted coal market, nor the 30 years of leased reserves in my state. But your document gives no justification for leasing additional coal. The new formulas for setting leasing levels are a disgrace, replacing the single clear standard that was part of the 1979 program, give DOI virtually unlimited latitude to choose the level of leasing, because no information is given on how much coal could be

leased, there is no cumulative analysis of the effects of mining, as required by NEPA. DOI should have addressed a "leasing for need for production" alternative, which was stressed in scoping hearings and which you ignored. Flooding the market with coal is entirely unrelated to your "assumption" that environmentally-sensitive tracts will thus be bypassed, said. The opposite is likely, and you know it. Surface mining contracts and other environmental laws are being inadequately enforced. DOI has weakened Unsuitability Criteria in substance and application. Only a return to the Four Basic Land Use Screens in planning for possible coal production will satisfy your mandate to protect the environment, non-fossil resources, and

34-1a

34-1b



TAOS ENVIRONMENTAL ASSOCIATION

P.O. Box 6040
Taos,
New Mexico 87571

2.
The human beings living on top of or near the coal:

1) Apply the coal Unsuitability Criteria at the beginning of the tract delineation process. Never again defer the mandatory application until the mine plan stage.

2) Consider "multiple use resource trade-offs," weighing other values against unwanted coal and apply this exercise to the FRLT.

3) Respectfully listen, accept, publish, and reply to all potential surface owners' statements of opposition to having their land and their lives mutilated. Surface owner consultation in the San Juan Basin was inadequate and literally thousands of people registered by Navajo residents were ignored by BLM because they were not "official" responses in English to official surface owner consultation.

4) Screen out lands of low mining potential early so that environmental analysis can focus on more likely tracts.

In New Mexico, BLM seem to turn out its outdated NEPA and prepare a comprehensive NEPA on the San Juan Basin as NEPA requires. We challenge you to go back to Square One and do it right, this time with no favoritism to the coal industry, with no predisposition to lease more than maintenance tracts.

We demand that the Diligence flags be strengthened, not weakened. No reduction in the royalty rates and no reduction in the 2% production rate.

34-1b
cont

CONSULTATION AND COORDINATION

TAOS ENVIRONMENTAL ASSOCIATION



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3. It large levels of leasing resume, industry will not be able to meet diligence. This will put pressure on diligence provisions by putting far more coal under lease than can be economically produced. A resumed leasing program is actually an attempt (among other things) to create and perhaps destroy diligence provisions.

DOI is ignoring the law which states that coal mining should occur only to satisfy the nations need for coal (SULCA). DOI leases, instead, for the purposes of building industry assets and speculation. There is no saved rationale for condemning large parts of the west as coal-dominant resource-areas for generations to come. DOI is also forcing reconsumption of a polluting non-renewable; rather than lease leases, some companies will feel forced to produce coal when there's out marginal need for it, new mines opened merely to retain leases. Conversely, the DEIS Supplement's claim that no new mining will necessarily occur after additional leasing is careless.

The analysis of reclamation potential in the document in question is entirely faulty and inadequate. Your sources are misquoted and misinterpreted (EUKI and USGS) and the assertion that a "strong compliance program" exists is unfounded. The studies you rely on are not optimistic about reclamation success in the west and a 1984 NRDC study cited poor enforcement of SULCA reclamation guidelines for western states.

In short, gentlemen, have you no pride in your work? Yours are miserable. *Y. C. Lynn*

RESPONSES TO COMMENT LETTER 34

- 34-1a See response to Category 1, Adequacy of the Supplemental EIS, in the Categorical Analysis of Comments section of this Chapter.
- 34-1b The Department of the Interior has never eliminated any of the four coal planning screens established in 1979, contrary to this comment. The Department is preparing land use planning guidelines that will clarify and standardize planning procedures for federal coal lands.
- 34-1c See response to Comment 33-5.
- 34-1d The Department of the Interior does not believe that companies will expend tens of millions of dollars developing existing coal leases that are nearing the diligence requirement. Rather, development will be driven by price and demand; existing coal leases that cannot be developed profitably and compete in the market place will be allowed to lapse.
- 34-2 The soils, vegetation, and reclamation analyses presented in the supplemental EIS are based on the results of studies and experiences of authorities in the reclamation field. Procedures discussed are well documented and when properly implemented have been shown to be reliable for making assumptions regarding effectiveness.
- This supplemental EIS does not imply that a strong compliance program exists but states that a strong compliance program is needed to ensure successful reclamation. The 1984 Natural Resources Defense Council study (Johnson and Hildebrandt 1984) cites the need for improved enforcement (compliance).

Getty Mining Company | P O Box 7900 Salt Lake City, Utah 84107 • Telephone (801) 263-3850

J D Spaulding, Vice President, Coal

May 8, 1985

Mr. Jack D. Edwards, Project Leader
Bureau of Land Management,
Division of EIS Services
555 Zang Street, First Floor East
Denver, CO 80228

Dear Mr. Edwards:

Enclosed please find Getty Mining Company's (Getty's) comments on the Draft Supplemental EIS for the Federal Coal Management Program.

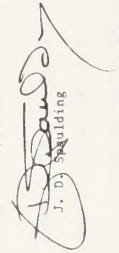
The western coal industry is stymied by the off again - on again Federal Coal Management Program. The government and industry need to come to grips with putting together a program that is reliable and workable. If not, we will continue to waste an important national resource through inefficient and higher cost operations, interrupted coal supplies and misallocation of scarce capital. The mistakes of the past can and must be corrected.

Getty strongly supports the revival of federal coal leasing activities and feels that the analysis contained in the EIS adequately addresses the changes that have occurred in the coal leasing program since 1979.

Opportunity for added public and industry input are necessary and welcome changes which will aid in establishing a practical and workable leasing program. Under the Proposed Action, production levels in the Low and Medium Alternatives to the year 2000 appear reasonably attainable. However, at the High Level a substantial impact would be made on the western mining community. Getty feels that there is little chance that market demands over the next fifteen years will require this activity.

The use of the National Coal Model in predicting future production trends among the five western coal regions has its shortcomings and it is hoped that the use of market analyses and industry input will aid in focusing the objectives of the Regional Coal Teams in establishing reasonable leasing levels.

Sincerely,



JDS:pw

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Pages 57-85 (Chapter 2) Getty Mining Company (Getty) fully agrees with the statement on page 58 which reads "without the opportunity to lease federal coal, some existing mines may have to shut down because they cannot obtain needed coal and fulfill contracts". It is well understood in other business segments that depleted inventories must be replaced if the business is to continue operating.

Getty has long recognized that the statement on page 59 that reads "changes in government regulations can also cause important shifts in the relative desirability of one energy source compared to another" is true. For this reason, Getty has consistently supported an industry-driven energy program. Such a program would avoid the pitfalls of discriminatory regulations.

On page 60, the first sentence of the first paragraph under Competition implies that the market for coal is based on a demand for a readily available, heterogeneous product. The assumption that "coal is coal" is absolutely invalid. The BLM planners should discuss the various coal characteristics and the relative availability of the same with the USGS, NCA and/or the private sector.

The statement on page 61 which in part reads "... competition among suppliers in a market situation will in general, tend to reduce the cost of that product or service and the price paid by consumers." should continue to say that "the higher that bonuses, rentals and royalties are set, the higher the cost to the consumer".

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Proposed Action, p. 65

Getty Mining Company supports the Proposed Action which would support the continuation of the federal coal management program. It is both Getty's desire and in the national interest to continue coal leasing.

Land Use Planning, p. 63

While recognizing the need for land use planning as a method of both maintaining a multiple-use land policy and conservation of natural resources, Getty believes that many environmental decisions should be delayed until after the lease(s) is sold and the mine permitting process is underway. By delaying decision-making until the permitting stage, the greatest amount of lands can be leased. It should be clear that the leasing of coal causes no adverse environmental impacts. By waiting until the permitting stage, administrative decisions can be based on a reasonable amount of factual data rather than ballpark estimates. Further, knowledge of possible mitigating measures may prevent the unnecessary denial of mining a national resource.

Activity Planning, p. 72

Getty supports the efforts to have the states affected bear more of the responsibility for leasing decisions.

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Leasing Upon Application, p. 74

Getty recommends, especially in times of low demand, that the adopted federal coal leasing program contain an option described on page 74: that is, leasing by application without the prerequisite of bypass, emergency or maintenance situations.

Getty does not support the intertract bidding procedure described on page 83. Intertract bidding fails to recognize the real need one particular company may have for one particular tract; rather, the sole purpose of the sale methodology is to maximize short term economic rent. As pointed out above, the maximization of revenues to the government is done so to the detriment of the consumer.

A substitute for the intertract sale procedure is simple competitive offerings and/or negotiated sales.

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Pages 89-118 (Chapter 3) Getty Mining Company is vehemently opposed to the use of the coal production forecasts presented in the Draft Supplemental EIS for purposes of establishing coal leasing levels. In addition, Getty submits that predicting future coal production in a quantitative manner is impossible, or extremely erroneous at best.

With regard to the use of coal production forecasts to establish coal leasing levels, Getty has two primary concerns: 1) as explained later, the forecasts are subject to gross inaccuracy; and 2) given other factors, it is neither necessary nor appropriate to consider future production when establishing leasing levels.

Specifically, Getty believes that the only risk with regard to leasing levels is that an insufficient amount will be leased. Under diligent development regulations, and with the FCLAA Section 3 provisions, any coal now leased or to be leased in excess of actual demand would revert back to the U.S. Further, given the misplaced emphasis of compensation to the U.S. from the so-called "Fair Market Value" payments as opposed to the vastly higher production royalty payments, potential lessees are currently forced to establish with great care the future demand for the coal.

In general, Getty believes that readily available federal coal is necessary to promote competition within the coal industry, lower the cost of coal-fired energy to the consumer and maximize royalty return to the federal

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government. Such availability will only be possible through a consistent, predictable and economically realistic coal leasing program.

Getty submits that the coal industry's needs for federal coal are not adequately being met. To alleviate this and other leasing program problems, Getty urges that there should be more frequent substantive interaction between industry and the Regional Coal Teams. In so doing, industry's needs and requests can be accurately transmitted and the government will be able to evaluate and respond to the same more effectively.

Getty also has serious concerns about the proposed forecasts based on demand driven models such as that suggested and utilized by the Department of Energy. In the past, such models have been inconsistent and inconclusive at best. A leasing system based on such models runs the risk of creating an under-leasing situation. Such an approach would have an adverse effect upon the stability of the leasing program, and the public's confidence in it. It would also stimulate industry's demand for alternative coal reserve acquisition methods - such as emergency by-pass leasing and modifications to existing tracts.

Getty respectfully requests that the Department of Interior review the previously submitted studies and comments by the National Coal Association on under-leasing effects before finalizing this process and committing itself to what appears to be an unworkable system.

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Chapter 4

Page 139, 1st Paragraph Under "No New Federal Leasing", and 2nd to the Last Paragraph. The statements "Coal production is expected to increase in the Western coal regions even without new federal leasing ..." and expanded production could bring more employment and population to the affected areas" and "because the increases in coal production and coal-related economic factors generally continue through the year 2000, the discussion is limited to that year" is not consistent with what appears to be the current trend. The assumption presented on page 94 appears too optimistic for what could be "economically mined under current conditions if the demand existed." This causes great concern of the 15 year forecast especially where the EIS is designed to guide the coal program for the next 5 years.

Page 206, 3rd Paragraph. In reference to reclamation of low rainfall area the following statement is made "... Areas receiving less than 10 inches of annual rainfall would require intensive reclamation and revegetation measures. Applying irrigation water, where available during the period of seeding establishment is an effective measure than enhances vegetation establishment in low rainfall areas..."

This statement infers that irrigation would be necessary to reclaim sites where the annual precipitation is less than 10 inches. There are many

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Further, a fundamental flaw in the use of coal production forecasts was identified within the Draft Supplemental EIS itself on page 92: "Because this supplemental EIS is designed to guide the choice of a coal program over the next 5 years, the resulting impacts of leasing coal from 1985 through 1990 would not occur until after 1995 because of the 8 to 10 year lead time needed to develop a lease into a producing mine."

Clearly, it is useless to study the impact of 1985-1990 leasing levels on the 1985-1990 timeframe when such impacts will not occur until after 1995, given the 10-year lead time.

With regard to specific problems with the production forecasts in the Draft Supplemental EIS, Getty submits that the process is too complex (reference page 91), contains too many assumptions, and suffers from the inability of anyone to predict what will happen to world oil prices, interest rates, and foreign influences, for example, or what will happen in international politics over the next 10-20 years.

As an excellent example of the futility of attempting to predict production levels, the Draft states on page 90 that "The 1979 forecasts reflected the general wisdom at the time, which did not anticipate the huge leap in oil prices and the depressing effect of that leap on the United States and world economies."

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operations in great detail. Specifically, they must address operations, reclamation, air pollution control, water management, blasting, and protection of the hydrologic balance, fish and wildlife, and cultural resources. The operations plan details the applicant's designs for the mining and facilities, including impoundments, roads, waste-disposal sites, and other structures. The reclamation plan details the proposed postmining land uses to be established; backfilling, soil stabilization, and grading techniques; how topsoil would be removed, stored, and redistributed; the schedule of revegetation; the species and amounts per acre of seeds and seedlings to be used; methods to be used for planting; and measures to be used to determine revegetation success.

In view of this and other supporting information presented in Appendix 5, and on page 207 and subsequent pages, it is felt that the sentence should be deleted or changed to read, "Current state and federal coal mining regulations provide for a strong compliance, monitoring, and maintenance program."

Chapter 5

Pg. 273 Fourth paragraph. The presumption that under the Proposed Action (PA) high production level in 2000, that an actual decrease in population would occur in the Green River-Hams Fork coal region is not logical. The PA would raise production from 43 mat to 50 mat in the period from 1995 to

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instances where successful reclamation occurs in the 7-9 inch precipitation zone without supplemental watering. The last sentence of this paragraph containing the statement on irrigation should be deleted.

Page 206, 4th Paragraph. Topsoiling is required by SMCRRA except where substitute material is documented to be superior. The comments that topsoiling is a soil conditioning technique and topsoil may be needed to overcome specific problems are inaccurate under the law. The last sentence of the paragraph should be deleted and topsoiling deleted as a soil conditioning technique.

Page 207, 1st Paragraph after paren (5). The second to the last sentence infers that the current coal mining regulations are inadequate in the western coal region in terms of compliance, monitoring, maintenance, and in providing timely and effective action and proper follow-up. This statement is not supported by the information presented in Appendix 5. For example, under "Permitting of Mining Operations" it specifies that SMCRRA requires a mining permit that contains comprehensive descriptions and data for the environmental resources and operations and reclamation plans. It goes on to say:

The operations and reclamation plan component of a permit application consists of several interrelated but discrete plans. These plans must describe virtually every aspect of the proposed mining and reclamation

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2000, an increase of 13%. The base case under the same period assumes that production would reach 60 mmt, an increase of 40%. The contention that production under the base case exceeds the PA creates a paradox that is falsely created by the National Coal Model. With the inordinate amount of federally owned coal in the region it is highly unlikely that current production levels could be maintained through the year 2000 with no new leasing, let alone increase from 37 to 50 million tons per year through the period 1990 - 2000.

35-9
cont

Pg. 274 Table 5-1. Coal production in the Fort Union Region is expected to increase from the 1990 base case of 24 million tons to a low estimate of 36 million tons, a medium estimate of 42 million tons and a high estimate of 51 million tons by 2000. The projections in the low and medium ranges appear reasonable, the high estimate does not. The factors of low BTU coal, excessive transportation costs, infrastructure, and environmental concerns will heavily influence the development of coal in the Fort Union Region. Due to the substantial amounts of undeveloped fee coal available, it is possible that the PA under any of the three leasing levels would not have much of an impact in promoting new production.

35-10

Pg. 275 Table 5-1 continued. Under the PA coal production would show no increase or a relative decrease from the base case projection under all scenarios through the year 2000 except for the high level projection for that period. This analysis projects an incremental increase of 107 million

35-11

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tons of production (40%) from the base case 1995 level (267 mmt) to the PA level (374 mmt) in the year 2000. The projection is totally out of perspective and demonstrates the limitations of the NCM in its inability to produce a reasonable assessment of long range demand. It is illogical to project a negative effect from leasing on production from 1990 to 1995 and thence a tremendous increment from 1995 to 2000.

35-11
cont

Pg. 276 Table 5-1 continued. To assume that base case production levels could increase from 36 million tons in 1990 to 60 million tons in the year 2000 (67%) is totally beyond reason. While a substantial amount of fee coal exists in the 'checkerboard' area, very little production will occur without adjacent federal coal which is necessary to form reasonable and economic mine units. The Colorado portion of the Green River-Hass Fork region has very little fee coal remaining and is totally dependent on continued federal coal leasing to sustain current production levels, let alone increase production.

35-12

Pg. 277 Table 5-1 continued. The Uinta-Southwest Utah region is comprised almost entirely of underground mines representing mature coal producing districts. The Utah portion of the coal region is represented by producing mines in the Book Cliffs and Wasatch Plateau coalfields. A review of undeveloped coal leases in the region would suggest that ample supplies of undeveloped coal exist to provide for future expansion. However, certain operations in both coalfields will require adjacent federal coal reserves

35-12a

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35-12a cont. within the next five to ten years to maintain their current levels of production. Without federal coal leasing, several of the larger producers will be shut down with a tremendous loss in investment and a misallocation of scarce capital to replacement production instead of new or expanded production. It appears that production goals are reasonably attainable under the low and medium levels, but at the high level a substantial amount of high cost metallurgical coal and lower than normal BTU quality coal will be forced upon the market.

35-13 Pg. 278 Table 5-1 continued. The summary projects an increase of 2 million tons by 1990 under all three leasing levels under the PA. It is highly questionable that under any competitive leasing scenario in the 1986-87 time frame that lease acquisition, permitting and mine construction and development could take place in a 3-year period. Given the infrastructure and transportation requirements for development of the San Juan Basin coalfield it is unlikely that the projected tonnages could be met at the medium and high levels beyond 1990.

35-14 Pg. 279 Paragraphs 1-4. The analysis of comparing high level effects for the various coal regions for Health and Safety, Air Resources, and Soils and Vegetation is misleading in that high level leasing is the least likely scenario to occur.

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35-15 Pg. 279 Paragraphs 5-6. The conclusions drawn are so general that they are totally inappropriate for use as a documented analysis.

Pg. 280 Paragraph 1. We support the conclusion that visual resources would not be significant on a regional basis under any alternative.

35-16 Pg. 280 Paragraph 2. It should be noted that many recreational facilities are presently overtaxed.

35-17 Pg. 280 Paragraph 3. The first part of the paragraph states in part ... "Wilderness would not be significantly affected at most levels and most regions under the Proposed Action but would be significantly affected at higher production levels in year 2000 and in the Fort Union Region. The uncertainty of wilderness designation and lack of knowledge of where population would grow make it difficult to predict impacts to wilderness resources as a result of increased coal production."

It appears that the latter part of the statement completely disqualifies the conclusion made in the first part of the statement. Two other points should also be made. One, coal production centers are not in the immediate vicinity of Wilderness Areas, and two, no one knows what the incremental impact will be from an increased population some distance away. There is no supportive statement to defend the conclusion and it should be omitted. The last sentence in the paragraph seems to support this view.

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Pg. 288 Table 6-1. It should be emphasized that the impacts to all categories except minerals is largely unknown. It is suggested that where effects are minimal or unknown that they be identified as such. Table 6-1 summarizes Irreversible and Irretrievable impacts on 12 subjects related to coal development. Objection is made to classifying Irretrievable impacts on Wildlife, Soils & Vegetation, Agriculture, Cultural Resources and Paleontology. The impact of mining on these subjects is often short term and more often than not mining produces a beneficial impact. These impacts result in better forage, thus larger and healthier wildlife; increased crop yield, thus better agriculture; and investigation for and preservation of cultural resources and paleontological specimens which otherwise might remain unknown.

35-23

Pg. 289 Paragraph 1. The conclusion should not appear unless supported by factual backup.

35-24

Pg. 289 Paragraph 3. There are many examples of restored wildlife forage which has actually increased the animal herd size.

35-25

Pg. 289 Paragraph 5. Please cite examples to illustrate what other nearby developments might be.

35-26

Pg. 289 Paragraph 10. These effects are minimal at best.

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Pg. 281 Paragraph 3. Reference is erroneously made to Table 5-2. It should reference Table 5-1. Response has been made earlier in this text to refute the conclusions drawn in this paragraph.

35-18

Pg. 282 Paragraph 1. A statement of present use to projected use should be made. It would help demonstrate the miniscule effect on water resources.

35-19

Pg. 282 Paragraph 4. For reasons discussed elsewhere in this text, it is highly unlikely that projected production levels in the year 2000 under the high level scenario for several regions could be attained.

35-20

Chapter 6

Pg. 287 Paragraph 4. Most of the communities to be impacted by increased population will have sufficient lead time to develop housing and services. Many of the larger communities centered in production areas such as Price, Utah; Gillette, Wyoming; Grand Junction, Colorado; and Farmington, New Mexico have adequate services to absorb a substantial increase in population.

35-21

Pg. 287 Paragraph 5. The short term loss of agricultural commodities will be limited to animal feed stock and only in a few locations. The brunt of the impact will be on grazing and only for short periods of time.

35-22

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35-27 Pg. 290 Paragraph 1. The basis for the statement that "other mineral resources might also be precluded from future use because of coal mining operations or facilities" has not yet been established. The statement should be omitted.

Appendices

Appendix 1

35-28 Pg. 299 Criteria 2, 3, 4, and 5. A statement should be made to the effect that these unsuitability criteria can be exempted through proper mitigating techniques.

35-29 Pg. 300 Criteria 6-18. Industry should be given an opportunity to respond to unsuitability designations as well as to provide mitigating measures for exceptions.

35-30 Pg. 301 Paragraph 2. State adopted unsuitability criteria should be given ample time and opportunity for review and comment by industry.

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Appendix 2

35-31 Pg. 304 Paragraph 2. Alternative leasing levels should be developed with input from industry as well as market studies. The proposed action level should reflect the majority of expressions of interest that are valid.

35-32 Pg. 304 Paragraph 4. Industry should be given a specific time frame to provide supportive data to aid the RCT in the tract ranking process.

Pg. 306 Paragraph 5. The use of working groups within each region is greatly encouraged. It creates a means of providing public input into the leasing program and can keep those interested groups informed and up to date on activities in between regular RCT meetings. A working group relation also creates a less stringent atmosphere for discussion of critical issues.

General Comments on RCTs

o The RCT should be given specific direction to classify each tract and to validate each expression of interest.

o The RCT should be aware of all Federal Coal Exploration License drilling programs and the extent of each program.

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o The RCT should solicit input from industry in the tract delineation process.

o In areas where the BLN/FS land swap will give management authority to the FS, the FS should have representation in the RCT.

Appendix 3

Pg. 315 Table A-3-1. Threatened and endangered species should and can be protected through proper mitigating techniques. More emphasis should be placed on mitigating conflicts where fish, reptiles, birds and mammals are concerned. Plant communities can be protected by No Surface Occupancy designations.

RESPONSES TO COMMENT LETTER 35

35-1 The sentence is a general statement that applies to any commodity, regardless of its availability or heterogeneity. More emphasis will be put on the nature of coal resources and their use. The National Coal Model (NCM) was used in the forecasting because of the way it attempts to represent this very problem. The NCM is further discussed in Chapter 3. More explicit use of coal characteristics and availability is a part of the regional sales process and should be an important factor in industry expressions of interest.

35-2 This statement is not necessarily true. In a market with less than full competition, the supplier can pass along some or all of these costs. In a market with much competition, the supplier may not be able to pass along costs. Bonuses, rentals, and royalties are generally paid for external costs that the mine operator does not pay, such as socioeconomic and environmental impacts and the inherent value of the unmined resource. These externalities are costs that society bears, and bonuses, rentals and royalties are just a way of allocating these costs to those who benefit from development of the resource. More competition is more likely to result in costs being allocated appropriately.

35-2a The Department of the Interior is legally required to complete land use planning before taking any coal leasing action. Part of that effort is the consideration of the environmental impacts of land use options, required by the National Environmental Policy Act of 1969 (NEPA). It is implicit that these environmental considerations must result in environmental decisions before the next step is taken. Therefore, the Department will continue to consider environmental impacts throughout activity planning and make environmental decisions before. Where stipulations will provide appropriate protection, however, they will be used. Finally, legal requirements, such as protection of threatened or endangered species and reclamation, must always be met before mining will be allowed.

35-2b The level of interaction between coal industry representatives and the regional coal teams would be a region-specific consideration, as discussed in the Proposed Action section of Chapter 2. The RCTs would be free to provide more opportunities for interaction should the need arise.

35-2c Demand-driven models are only one source of input to the leasing process. The RCTs will base their decisions on all existing information, including industry expressions of interest. Thus, industry may lease any economically feasible, environmentally acceptable tracts if it provides enough information to the RCTs to justify the offering and is willing to pay fair market value.

35-2d This statement is true only for new mines. Emergency leases, which can be obtained now, and maintenance or expansion leases, which could be obtained under the Proposed Action and Leasing by Application Alternative, can extend or expand capacities in the near term. Thus, the 1990 time period applies.

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35-3	BLM agrees that the future is too uncertain to try to account for every possible scenario. That is the reason for having several broad ranges so that the analysis is likely to bound the probable outcomes. More detailed analysis is required in the regional sale planning, but the timeframe will generally be shorter and the market more focused where specific tracts and projects can be targeted for analysis. The Proposed Action would have the flexibility to respond to changing conditions.	demand. At the high production level, this phenomenon would not occur because the Powder River Region would also reach its capacity without more leasing. Thus, in the Powder River Region, coal production would increase under the Proposed Action at the high production level.
35-4	The analytical approach used is explained on pages 124-125 of the draft supplemental EIS. The analysis focuses on local production for target years 1990, 1995, and 2000.	The capacity estimates used in Chapter 3, Production Forecasts reflect consideration of the effects of enforcing Section 3 of the Federal Coal Leasing Amendments Act of 1976 (FCLAA). Although applying this measure reduces capacity estimates somewhat, a large amount of federal coal is already under lease that could be developed in the Green River-Hams Fork Region.
35-5	See response to comment 35-3.	The production capacities and results of the forecasts in the final supplemental EIS reflect this situation.
35-6	This statement in the supplemental EIS does not imply that supplemental irrigation water is needed to reclaim sites in areas with less than 10 inches average annual precipitation but that supplemental irrigation water, where available during seeding establishment, is an effective measure for enhancing revegetation in such areas.	BLM agrees that 3 years is too short to develop a new mine, which BLM assumes is the implication of emphasizing competitive leasing. The Proposed Action could include maintenance and expansion leases that would not be included under the alternatives.
35-7	The supplemental EIS has been changed in response to your comment.	The development and transportation costs for the San Juan River Region reserves will be reviewed to assess whether they reflect the costs required for this expansion.
35-8	Current regulations and detailed reclamation plans provide guidelines, effective measures, and compliance programs. Regulations and effective measures, however, must be properly implemented to achieve successful reclamation. Experience shows that reclamation has not always been successful, largely because of noncompliance with reclamation measures shown to be effective. Federal and state regulations identify compliance, but compliance (enforcement) needs to be strongly emphasized to ensure that measures are properly implemented and maintained.	The introductory section to Chapter 5 (page 273 of the draft supplemental EIS) states that, although Table 5-1 provides a comparison of measurable impacts, the narrative discussion focuses on the high production level in 2000 where the greatest differences would occur. A similar discussion was not presented for the other production levels and time periods because such a discussion would tend to be confusing or redundant due to small or no differences between alternatives in most regions. Whether the high production level is least likely to occur is a matter of conjecture. Only time will tell which set of assumptions for the production levels would most closely approximate reality.
35-9	Coal production in the Green River-Hams Fork Region would be higher at the high production level under the Proposed Action because restricted capacity in the Powder River Region would result in the Green River-Hams Fork Region capturing part of the unsatisfied market demand.	Until site-specific mining plans are submitted, general statements such as these are appropriate in a programmatic EIS.
35-10	The additional analysis presented in the Production Forecast Technical Report (BLM 1985b) did result in lower production in the Fort Union Region. Federal ownership of coal reserves in the Fort Union Region is as low as 20-30 percent, but more leasing may be needed to fill gaps in potential mine plans to configure an economical mining unit.	Although the statement in the third sentence "existing demands for recreation already exceed the supply" implies that many recreation facilities are already overtaxed, the narrative has been amended to clarify your concern.
35-11	Coal production in the Powder River Region would be higher under the New Federal Leasing than under the Proposed Action at the low and medium production levels because the Fort Union Region would reach its capacity and the Powder River Region would pick up that	This inconsistency has been corrected in the text.
		This error has been corrected in the text.
		This supplemental EIS uses the No New Federal Leasing Alternative as a baseline (see draft supplemental EIS, page 124). The task of determining the present use of water by all users for each region is beyond the scope of this supplemental EIS.

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35-20	Although some of the production projections may seem high, they cannot be ruled out. All production and capacity estimates have been reviewed for the final supplemental EIS on the basis of more information received during the comment period.
35-21	Communities affected by coal development could be temporarily harmed if housing and support services are inadequate for increased populations. The key word is <u>could</u> . If the communities have enough lead time to develop housing and services, this impact would not occur. Experience, however, has shown that communities often think they have lead time but that company plans change so quickly that communities have ended up with none.
35-22	The kind of agricultural commodity affected would vary from place to place, depending on the specific location of mines.
35-23	Footnotes 1 and 2 in Table 6-1 recognize long-term soil and vegetation productivity with successful reclamation. Footnote 1, however, points out that diversity of vegetation types would be lost where changes in topography have affected microclimates. The general impacts from increased coal development would include primary disturbances and destruction of vegetation habitat types. Reclamation of mined out areas does not mean in all cases that remaining wildlife habitat would be restored (Wildlife, Chapter 4, page 117 and Footnote 1 of the draft supplemental EIS). Mining near surface waters would also disturb aquatic life by introducing materials (organic and inorganic) into the water by runoff.
35-24	With respect to agriculture, Footnote 3 recognizes that crop and forage production could be temporarily lost and that these losses could lead to long-term dislocation of individual farms and ranches. For example, large losses in forage production could reduce or eliminate livestock herds. Mining could also disrupt irrigation systems, access roads, wells, and watering facilities. Coal development would affect cultural resources by destroying or altering the resources or surrounding environment. Cultural resources, once lost, are nonrecoverable (Cultural Resources, Chapter 4, page 123 of draft supplemental EIS). The paleontological section of Chapter 4 points out that impacts could be beneficial or adverse (page 244). Where paleontological resources exist, the removal of overburden could disrupt them. Fossils damaged or destroyed by mining would be irreversibly and irremediably affected. Mitigation requirements in the form of surface paleontological inventories, however, could provide information on paleontological resources that might not otherwise be studied.
	Research and experience in strip mine reclamation support the conclusion that the diversity of vegetation could be altered where the intricate premining topography could not be completely restored. See the Soil Reconstruction section (page 208, paragraph 4) of the draft supplemental EIS for a discussion of restoring land surfaces.
35-25	Your statement is correct. Paragraph 3 states that wildlife habitats would eventually be reclaimed but that reclamation might take several decades.
35-26	Development in this case is a highly general term, meaning any type of industry that would compete for the area's remaining PSD increments.
35-27	This statement has been changed in response to your comment.
35-28-35-30	See responses to these comments in the Responses to Other Unsatisfactory Review Comments section at the end of Appendix 1.
35-31	The procedures for developing alternative leasing levels are described in Appendix 6 of the draft supplemental EIS, beginning on page 287. BLM will request input from all interested individuals and groups.
35-32	Industry would be given many opportunities to submit information throughout the land use and activity planning processes under the Proposed Action. Along with other interest groups and the public, industry would be invited to provide BLM with coal and other resource data during land use planning. In addition, before the first regional coal team (RCT) meeting, BLM would prepare a summary of the land use plans expected to be the basis for the next round of leasing and present a status of the data used in developing the plan. This summary would be released to the public at least 45 days before this first RCT meeting. If the RCTs decide during the first meeting to proceed with activity planning, the science advisors would review existing data and assess its adequacy for regional activity planning. Again, these reports would be released to industry and the public before the RCT meeting.
	The tract profiles would also include an assessment of the adequacy of the data (coal and noncoal resources) to be used in RCT ranking. These profiles would be released before the RCT meeting for tract ranking and selection. During this period it should be obvious what data would be useful to aid the RCT in tract ranking, and industry could provide that data at any time before the ranking meeting. If the data would also help in the site-specific environmental analysis (in the tract profiles), it should be provided as early as possible.
	All of these time periods would be publicized through the public participation calendar, which BLM would prepare immediately after the RCT determination to proceed with activity planning. Industry would presumably request a copy of this calendar to keep abreast of RCT and BLM activities.

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AMERICAN LUNG ASSOCIATION of North Dakota
The Christmas Seal People

212 North 2nd Street • P.O. Box 5004 • Bismarck, North Dakota 58502 • (701) 223-5613

May 7, 1985

The following comments are prepared by the American Lung Association of North Dakota (ALAND) for the US Department of the Interior, Bureau of Land Management regarding the February, 1985, Draft Environmental Impact Statement (EIS):

The American Lung Association of North Dakota works to protect the respiratory health of North Dakotans through prevention and control of lung disease. In this capacity, the ALAND's concern centers around an inadequate analysis of the air quality situation of the Fort Union Region by the Draft EIS.

Issue 13, where Interior considers the inclusion of Class I Air Quality Area into the scope of Criterion 5, is evidence of Interior's failure to acknowledge air quality problems in the Fort Union Region. The assumption here is that only fugitive dust sources which hinder scenic quality, merits consideration.

36-1 According to Issue 13, "...many operation mines do not have a large, adjacent processing facility, most proposed mines would not be subject to PSD regulation." This is not a statement that accurately describes the Fort Union Region, however, as mine mouth processing is prevalent in the Western part of our state. These facilities have a significant impact on the state's air quality. ALAND's concern is with sulfur dioxide emissions which become fine particulates, inhaled into the lungs as particulate sulfates. Particulate sulfates have been shown to be hazardous to human health.

PSD regulations offer little help in protecting our Class I standards. Waivers or permits have been consistently granted and have come to be a legal means by which Clean Air Quality Standards are violated. Waivers create sources of emissions, adding to existing ones such as hydrogen sulfide from flared natural gas wells.

Page 2

36-2 The Draft EIS fails to acknowledge cumulative impacts. In fact, instead of taking other sources of air pollution into account, the insistence is on dealing only with information specific to a given mine site. The mine site evaluation stage is too late to effectively control problems of air pollution. It is at this stage, when political and economic investments come into play, that waivers are most readily granted.

The Draft EIS fails to address the impact on air quality resulting from coal mining combined with mine mouth processing as is the case in the Fort Union Region. Also, the cumulative impact from other air pollution sources is not acknowledged. ALAND therefore encourages Interior to revise the Draft EIS and to develop unsuitability criteria that deals exclusively with the issue of air quality.

Submitted by,

Duane Flick
 Duane Flick
 Executive Director
 American Lung Association of North Dakota
 PO Box 5004
 Bismarck, ND 58502

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 36

- 36-1 BLM does not issue air quality (PSD) permits for specific mines, but, through the regional EIS process, BLM does coordinate with all potentially affected parties when conducting coal lease sale preparations. Areas known to present large air quality problems have been deleted or deferred as a result of applying National Environmental Policy Act analysis without changing the unsuitability process.
- 36-2 The supplemental EIS does not deal with impacts at specific mine sites but deals with impacts in a regional context. The cumulative air quality impacts cannot be assessed without knowledge of exact lease sites, which are unknown at the programmatic level of analysis. The regional EISs will address cumulative impacts if the Proposed Action is adopted.



37 TRAPPER MINING INC.

May 10, 1985

Mr. Jack Edwards, Project Leader
BLM - Division of EIS Services
555 Zang St. - First Floor East
Denver, Colorado 80228

Dear Mr. Edwards:

Trapper Mine, located about six miles south of Craig, Colorado, is owned and operated by Trapper Mining Inc. This surface operation covers approximately 13,000 acres and is the third largest coal producer in the state. The operation includes four federal leases and additional federal coal may be needed to improve the mine plan. Trapper has an expected remaining life of thirty years under an existing contract with the adjacent Craig Generation Station.

We would like to take this opportunity to comment on your "Federal Coal Management Program Draft Environmental Impact Statement Supplement." The Supplement is based on three alternative leasing levels which imply three different coal production levels. These production levels are derived from the National Coal Model (NCM) with methodology described in "Production Forecast Technical Report," by the BLM. This is a very important part of the EIS process, and we were sorry to see that the report was not physically incorporated into the EIS.

The NCM has many good points, however, the model runs did not account for coal imports into the U.S. This raises questions as to the validity of the coal demand, production levels and therefore, the environmental impacts of federal coal leasing. The U.S. Department of Commerce has recently reported that coal imports from Columbia could offer a potential cost advantage to 79 of the nation's 325 largest coal-burning generating plants. We believe that this is a very real possibility and suggest additional model runs incorporate coal imports.

The Production Forecast Report also states that the BLM staff has adjusted the NCM's demonstrated reserve base (DRB) for federal coal leases which they expect to be eliminated because of diligence requirements. We believe that this is a proper task. However, we believe that the removal of leases which will be returned to the Government because of the August 4, 1986, FCLAA Section 3 sanction against additional federal leases should also be undertaken. The impact of this legislation on federal coal development must be included in the analyses to provide an accurate portrayal of outstanding federal leases.

Additionally, we would like to point out that the DRB more accurately represents true reserve information than the BLM method of lease reserve calculations. We suggest that the BLM adopt the DRB methodology in calculating lease reserves.

P.O. Box 187 Craig, Colorado 81626

(303) 824-4401

37-2a

Mr. Jack Edwards - BLM
May 10, 1985
Page 2

37-3 Finally, in regard to the modeling, the BLM should evaluate future coal production in light of the wholesale readjustment of pre-1976 leases to higher royalties and rental rates. The 1000 percent royalty rate increases will cause many western coal leases to be uneconomical to mine and market in their traditional demand regions. We again suggest undertaking NCM runs to determine coal production using this fact.

The Supplement was reviewed in some detail and compared to the original 1979 EIS and we would like to make some specific observations on individual sections of the Supplement.

37-4 In the "Air Resources" section, the authors state that "Recent studies" and cite PED CO...1978 (page 187, para. 2). On page 188, first paragraph, the authors state that the impact depends on three variables - climate, type of dust-producing operations, and size of mine. Nowhere do the authors indicate that coal mining operations commonly apply dust control practices. These practices include using water, chemicals and operating practices, i.e. speed limits. Many expensive and time-consuming activities are integrated into the operations to protect air resources. We suggest more timely studies be used to determine the real impact and that the authors include consideration for actual practices which are used by western mining operations.

37-5 Through much of the "Soils and Vegetation" section, one is led to believe that reclamation of a coal mine is questionable. The entire subject is fully and accurately covered in one paragraph of the EIS in the description of the SMRCA (last paragraph of page 202). In practice, as this paragraph clearly states, the SMRCA requires "mined land to be restored to a condition equal to or better than its pre-mining condition." Why does the 1985 supplement not remove this section on the basis of an obsolete concern? Current federal requirements would prohibit a coal mine in an area which could not be reclaimed.

37-6 In the "Wildlife" section the impact is reduced from the 1979 level by a straight-line extrapolation based on the reduced forecasted coal production. This simple, often-used statistical technique assumes no change in operator practices, new technology or wildlife adapting to regional and local changes. We suggest that a more realistic and detailed approach to wildlife impacts would conclusively show that impacts are much less than indicated using the author's techniques.

Thank you for this opportunity to comment on this very important document.

Best regards,

Russell W. Frum
Russell W. Frum
Asst. Manager of Administration

RWF/mg
cc: J. E. Edgerley
W. E. Sowards
H. B. Humphries

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 37

- 37-1 In most cases, the imports would little affect federal coal. Coal imports are not likely to result in federal coal production beneath the low production level, and the impacts are probably already included within the range evaluated.
- 37-2 The field staff dropped from the capacity estimates leases that appeared uneconomical or would not meet diligence. If faced with Federal Coal Leasing Amendment Act (FCLAA) Section 3 compliance problems, these leases could be assigned to a company for which Section 3 is not a problem. Most leases that will be relinquished due to FCLAA Section 3 are not expected to be included in the production capacity estimates, particularly the low capacity figures. Problems that occur will most likely be in the regions with the most overcapacity, such as the Green River-Hams Fork Region and the Colorado portion of Uinta-Southwestern Utah Region. The capacity estimates for the final supplemental EIS have undergone more review now that more data exists on the potential impacts of Section 3. If demand stays as low as at the low production level, more relinquishments will occur, but the impact will be slight because the demand is low.
- 37-2a The coal supply calculations incorporate the DGB to the extent appropriate, but more information and methods are needed to accurately model all alternatives. See Chapter 3 for an explanation of supply assumptions.
- 37-3 The higher royalty rates were already included in the analysis.
- 37-4 More timely studies were used, such as the Morrison-Knudson Company Inc. (1983) study referenced on the same page a couple of paragraphs later. The Air Quality Methodology section in Appendix A discusses the problems of calculating emissions from production estimates. Because practices applied cannot be predicted on a site-specific basis, the worst case--uncontrolled emission rates--was analyzed. Dust control strategies for any individual mine must be applied to each source to compute actual emission rates in later site-specific analyses.
- 37-5 Even though a site is determined to be reclaimable, compliance with an effective reclamation program is needed to achieve successful reclamation. Therefore, Appendix 5 is presented in this supplemental EIS.
- 37-6 The general level of impact analysis included in a programmatic EIS cannot go into the detail suggested in this comment. The data needed for such analysis is highly site specific and will be covered in later site-specific EISs if the Proposed Action is adopted. Additionally, BLM knows of no more sophisticated impact analysis other than straight-line projections that have been proven and accepted by wildlife management agencies. Research is being conducted in this area.



38

United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
WASHINGTON, D.C. 20240

9 MAY 1985

Memorandum

To: Project Leader, Division of Environmental Impact
Statement Services, Bureau of Land Management

From: Assistant Director, Technical Services and Research,
Office of Surface Mining

Subject: Federal Coal Management Program Supplemental
Environmental Impact Statement (EIS)

The Office of Surface Mining (OSM) has reviewed the draft supplemental Environmental Impact Statement (EIS) for the Federal Coal Management Program prepared by the Bureau of Land Management and we have prepared comments/suggestions (attached) for your consideration in preparing the final environmental statement.

Attachment

OSM Review of the Draft Supplemental EIS
for the Federal Coal Management Program

Comments/Suggestions:

Page 35, table 1-8. We suggest the explanation for the American Indian Religious Freedom Act of 1978 be reworked. The major purpose of the act is to establish policy to protect and preserve the right of American Indians to exercise their traditional religions. The major relevance of the act is that it insures for traditional native regions the same rights of free exercise enjoyed by other religions. Delete any reference to "sites."

Page 35, table 1-8. We suggest the explanation for the Archaeological and Historical Preservation Act be reworked. The purpose of the act is to "provide for the recovery of archaeological, scientific, historical and prehistoric data endangered by Federal construction or federally licensed or assisted project, activity, or program." The major relevance of the act is that it gives agencies the authority to spend program money to recover such data and to require agencies to notify the Secretary when such activities will result in the destruction of data.

Page 35, table 1-8. We suggest you add the "Archaeological Resources Protection Act, P.L. 96-95; 16 U.S.C. 470aa" to this table. The major purpose of the act is to "increase protection of archaeological resources 100 years of age or older and to increase criminal penalties beyond the Antiquities Act of 1906." The major relevance of the act is that it "updates and expands protection of archaeological resources beyond the 1906 Act and, in large measure, supercedes the earlier statute."

Page 35, table 1-8. We suggest the explanation for the National Historic Preservation Act be reworked. The major relevance of the act is that it "requires Federal agencies to consider properties listed in or eligible for listing in the National Register of Historic Places prior to expending any Federal funds, or issuing a license, for any undertaking which will effect such properties and to consult with the Advisory Council on Historic Preservation if such properties are adversely affected." It also "establishes the President's Advisory Council on Historic Preservation." The popular name for this act is more accurately listed as the "National Historic Preservation Act of 1966, as amended."

Page 121, para. 3. We suggest including here the text of the footnote to table 14-1 on page 122.

CONSULTATION AND COORDINATION

Page 166 last para. and page 167 first para. clarification seems needed because on p.166 "...the highway system would not be significantly affected, except on U.S. 40..." but on p.167, "...congestion of segments of State Highways 13 and 789 and US 191 could cause significant impacts..."

Page 168 para 4. We suggest the significant effects to the railroad system be described briefly.

Page 172, Table 4-8: We suggest the title of the table be changed to read: "Projected Average Annual Accidents..." to agree with first sentence of last paragraph on p. 171. Table 4-8 projects accident ...

Page 190-194, Table 4-11: We suggest the footnote used on Table 4-1 be used here also.

Page 206, para. 4. We suggest the discussion of common soil conditioning techniques be expanded to explain that the replacement of topsoil or some suitable replacement is a regulatory requirement. Implying that it is an optional requirement for soil conditioning purposes misleads the reader.

Page 207, para. 4. We suggest the second sentence be replaced with: "Regulations call for returning the land to the approximate original contour and establishing a cover of perennial, diverse vegetation that will support the proposed postmining land use."

Page 207, para. 5. We suggest the list of steps involved in surface coal mining be expanded to include: "(7) replace topsoil or other approve plant-growth medium."

Page 208, 3rd para. We suggest the following rewording: "Soils would mostly be disturbed for short periods for surface mining, but could be disturbed for several years or even decades for underground mining activities."

Page 211, para. 7. The statement "Most good cropland, including prime farmland, usually occurs on alluvial valley floors" invites the discussion of regulatory requirements that are outside the scope of this document. We suggest the statement be deleted.

Page 207, para. 5. We suggest the list of steps involved in surface coal mining be expanded to include: "(7) replace topsoil or other approve plant-growth medium."

Page 225, para. 2. The first sentence states that population decreases would benefit recreation resources in the regions indicated, but the second sentence states that there will be increased demand resulting in "reduced quality of primitive-type recreation..."

Page 225, para. 4. "Expansion of coal mining would also benefit recreation". But would not such expansion generate population increases which generally have negative impacts?

Page 226, para. 2. After the first sentence, the rest of the paragraph seems to be discussing impacts related to growth and development resulting from other than coal mining, which appears to be beyond the scope of this EIS.

Page 231, para. 1. The last sentence states that there is lack of knowledge of where populations would grow. But, does not Table 4-13 on page 228 gives general information on this topic.

Page 245, para. 7 We suggest the following rewording: "Even if...some knowledge may be gained by investigating them now rather than..."

Page 259, para. 4. To meet Federal regulations implementing SMCRA, land reclamation must be designed to contain, at a minimum, the 10-year, 24-hour precipitation event. We suggest you replace the last part of the fifth and the sixth sentence in this paragraph with: "...to accommodate the 10-year, 24-hour precipitation event, can handle only to their designed capacity. If this capacity is exceeded, sediment would enter the stream below the mine area."

Page 260, para. 7. We suggest you say "hydrologic characteristics ... included rather than hydrologic characters ... contained."

Page 261, para. 6. We suggest that the use of "surface-water sedimentation" rather than "surface water quality" would make this discussion more correct. There is a very real possibility that ground water, degraded by passing through reclaimed and resaturated spoils, may enter the surface-water system outside the mine boundaries. Resulting surface-water degradation would probably not be remedied by required mitigation measures. Also, it appears that the word "basis" was intended rather than "bases" in the last sentence. (See also page 265, para. 1).

Page 288, table 6-1. Footnote 4 should be corrected to read: "...hundreds or thousands of years..." instead of hundreds of thousands of years.

Page 331, table A-4-5. This table is duplicated exactly on page 332. We suggest one of the duplicate tables be deleted.

COMMENTS AND RESPONSES

RESPONSES TO COMMENT LETTER 38

38-1-38-4	Table 1-8 has been revised as suggested.
38-5	The suggested change has been made.
38-6-38-7	The text in the final supplemental EIS has been revised to reflect this data.
38-8	The title of Table 4-8 has been changed to read, "Projected Average Annual Accidents and Fatalities from Mining, Refining, and Processing."
38-9	A footnote has been added to Table 4-11.
38-10	The supplemental EIS has been revised in response to your comment.
38-11	This paragraph has been changed as suggested.
38-12	This step has been added to the list of steps involved in surface coal mining.
38-13	The supplemental EIS has been changed to reflect your comment.
38-14	The statement as written reflects the situation as it exists.
38-15	The second sentence was intended to apply to the Fort Union and Uinta-Southwestern Utah regions, whose coal-related populations would increase under coal production forecasts in the draft supplemental EIS. Under coal production forecasts in the final supplemental EIS, however, coal-related populations would substantially increase only in the Uinta-Southwestern Utah Region. The narrative has been corrected to clarify the statement.
38-16	Coal-related population increases could adversely affect recreation, as you state and as the draft supplemental EIS explains. The purpose of the statement, however, is to remind the reader that increased revenues could benefit recreation if used to expand, upgrade, or otherwise provide more or better recreation facilities, even though such benefits could be outweighed or cancelled in effectiveness by adverse impacts.
38-17	The purpose of the No New Federal Leasing Alternative (no action) is to provide benchmarks for use in comparing the environmental effects of the action alternatives, as required by the Council on Environmental Quality. Therefore, impacts that would occur must be known regardless of whether more coal is being leased under the Proposed Action or other alternatives or whether No New Federal Leasing is chosen. The rest of the paragraph provides the required baseline information.
38-18	This sentence was intended to state that such knowledge is lacking within any particular region. The text has been changed to make this clarification.
38-19	This statement has been deleted from the final supplemental EIS.
38-20-38-22	These changes have been made in the final supplemental EIS.
38-23	Footnote 4 in Table 6-1 has been corrected.
38-25-38-28	The supplemental EIS has been changed to reflect these comments.

Page 339, para. 3. Please replace "state agency" in the first sentence with "regulatory authority," because OSM administers the regulatory program in some states. Also, state coal mining regulatory program" and state regulatory program, used here and throughout the remainder of the appendix, invites discussion of regulatory requirements that are outside the scope of this document. The terms should be replaced with "surface coal mining regulatory program for that State" and "regulatory program for the State," respectively wherever they appear. (See page 340, para 3, and page 342, paras. 1-3.)

Page 349, para. 7. We suggest the second sentence be replaced with: "Regulations now require the new surface to be regraded in order to restore the approximate original contour (AOC) of the land with all highwalls and spoil piles eliminated. In addition, the backfill area must be regraded to attain the lowest grade practicable but in no case more than the angle of repose so as to prevent slides, erosion, and water pollution."

Page 352, para. 1. Regulatory changes in 1983 updated the earlier 1979 regulations. We suggest the last sentence be replaced with: "The regulatory authority measures the success by comparing the ground cover and the above-ground productivity of a given area, as well as the stocking density of woody browse/tree species appropriate to the postmining land use for the area, to the 'selected success standard.' 'Selected success standards' are either undisturbed reference areas or technical standards approved by the regulatory authority (OSM 1983)."

Page 352, para. 2. Since the regulations permit the use of both native and introduced species, we suggest the last sentence concerning the reestablishment of native plant communities be replaced with: "The goal of OSM, however, is to reestablish plant communities consistent with the proposed postmining land use."

7 May 1985

Dear Mr. Edwards:

Comments concerning the Federal Coal Management Program, Draft Environmental Impact Statement Supplement

Thank you for the opportunity to comment on the draft. The BLM is supposed to be concerned with multiple use. It makes little sense to dump vast tracts of coal when the demand is low. This insures that the selling price will be low. In this era of huge federal deficits and the inflated prices that industry charges the Federal Government for spare parts and coffee makers, it is unconscionable for the Government not to attempt to conduct any coal leasing program in such a manner as to attain at least a reasonable return for the land.

The BLM is asking us to believe that enforcement of cultural resource laws will continue. However, President Reagan has proposed to reduce the number of federal employees by 25,000 and there is continuous clamor from Washington, D.C. to the cultural resource legislation. Federal employees are already overworked and cannot devote the requisite attention to cultural resource management. In the face of industry pressure and reduced staff, cultural resources are bound to suffer.

Rather than leasing coal at this time, the BLM should be conducting additional sample surveys throughout the San Juan Basin in order to gain a more accurate understanding of where the sites are located and how many are in question. This information will aid both the BLM and the coal industry in their long-range planning.

Archaeologically, the San Juan Basin is unique in the United States, and indeed in all of North America, because it contains an almost unbroken continuum of sites ranging from approximately 10,000 B.C. to the modern era. The total number of archaeological sites in the San Juan Basin is estimated at approximately 250,000. The aridity of the Basin has both enhanced the preservation of many sites and has been a major factor in keeping the population density and the visitation relatively low. The lack of human disturbance increases the significance of many sites.

The most visible and well known archaeological sites are those related to the Chacoan Anasazi. However, magnificent, the Chacoan sites represent only one of the Basin's ancient cultures. Other sites found in the Basin are those of the Big Game Hunters of 8,000 to 12,000 B.C.; the Archaic Hunter-Gatherers of 6,000 B.C. to AD 400; the Anasazi agriculturists of about AD 500 to 1300; the Navajo, Apache, and Ute sites inhabited at the time of the Spanish entrada; and later historic period Hispanic and Anglo herders and ranchers. Thus, the Basin constitutes an unusual microcosm for studying the development of many different strategies of adaptation to the environment. If modern people are to profit from the experience of past human groups, whether historic or prehistoric, we need to understand the survival strategies attempted and why they succeeded or failed to cope with harsh, marginal environments like that of the San Juan Basin.

Until recently, the cultural record in the Basin has been relatively safe and undisturbed. Any major impacts to the Basin resulting from mining and construction are covered by a variety of laws. One of the unfortunate consequences of the myriad of proposed developments will be the incidental and/or accidental impacts to the cultural resources. Increased numbers of inhabitants and workers in the area will inevitably increase the destruction of the sites.

It is important to note that the New Mexico Archaeological Council is not opposed to development that proceeds in a rational and reasonable manner and that thoroughly considers all facets of the resources. We are opposed to an artificial crisis-like atmosphere and a rush to dump as much public land into private hands as possible -- especially at a time when demand for coal is very low.

We suggest that a thoughtful and coherent management plan for the entire San Juan Basin be constructed for both the cultural and the natural environments. It is necessary to provide adequate funding for planning, management, and mitigation.

The Draft Environmental Impact Supplement of the Federal Coal Management Program indicates on page 236 that "Judgmental rather than formal statistical procedures have estimated that between 1,727 and 2,295 sites occur in minable areas." Reference is made to the 1984 Final San Juan River Regional Coal Environmental Impact Statement. In this document, judgmentally predicted site densities are given for the major cultural periods represented in the San Juan Basin. The following problems exist with extrapolating the densities throughout the Basin: The figures were derived from the Bisti-Star Lake Preference Right Lease Application Region and the site densities in several of these areas are relatively low. The predicted average density of nine sites per square mile is lower than the 14 sites per square mile based on real data (through 1984) and is significantly lower than that of the Chaco Canyon area only a few miles to the south of a portion of the Preference Right Lease Area. In the approximately 40 square miles in and around Chaco Culture National Historical Park, the site density is 47 per square mile. This is a major difference when compared to the predicted densities. There are over 70 known outlying Chacoan communities scattered throughout the Basin. The site densities are nearly as high in several of these communities as they are in the canyon.

There are significant methodological problems with the archaeological study relied on for the derivation of the average density in the Bisti-Star Lake study. Two of these include: 1) the fact that very little survey had been conducted prior to the study (only 69 of the two square kilometer grid units had at least 60 per cent of their respective areas surveyed). Therefore, in order to increase the sample size, densities were predicted for some number of additional grid units and then these numbers were treated as real data. A combination of the actual data and the projected real data served as the basis for the final prediction for the overall study area. It should be noted that portions of the study area are within a few miles of the concentration

COMMENTS AND RESPONSES

RESPONSES TO COMMENT LETTER 39

- 39-1 The purpose of the impact analysis in this supplemental EIS is to evaluate impacts at a programmatic level. No attempt has been made to predict or determine site densities for any of the coal regions because this information should be provided in regional coal EISs.
- 39-2 Because of the generalization of the coal region boundaries and the lack of precision regarding areas that might be affected by coal production in New Mexico and Colorado, the computer-based inventory of all known sites in New Mexico would be unnecessarily precise for use in a programmatic EIS. Such precision, however, would be valuable for the next regional EIS update if the Proposed Action is adopted.

of ruins in and around Chaco Canyon. 2) The second problem is that the inaccuracies of this study are cloaked in statistical jargon. At first glance the results look appealing because the regression equations have relatively high R-square values (meaning that much of the variability is accounted for); however, the standard errors of the means of some of the equations are larger than the means themselves. The ability of the equations to predict site density in any particular area is very limited even though some general trends are present.

The State of New Mexico maintains a computer-based inventory of all of the known sites in the entire state. Why did the BLM not avail itself of real data when drawing up these documents? Why did it choose to rely on dubious extrapolations which are useless for the newly expanded (see next paragraph) areas of the San Juan Basin as it is defined in the 1985 draft supplement?

A very important point must be made. The 1984 Final San Juan River Regional Coal EIS, in which the above noted predictive model is to be found, defines the San Juan Basin as it has been used by archaeologists for the past 10 to 12 years (north of old Highway 66, west of NM 44, up to the Ute Mountain in Southern Colorado, and extending into Arizona.) However, in this 1985 Supplement to the Federal Coal Management Program, the San Juan Basin has magically expanded more than 50 miles to the east of NM 44 and about 100 miles to the south. Whereas the environmental characteristics of the San Juan Basin are relatively uniform and predictions within this area have some validity, the "new areas" are vastly different. They include significantly differing ecological situations including permanently flowing streams and rivers and areas with at least twice the average annual rainfall as occurs in the San Juan Basin. Since the prehistoric inhabitants were strongly conditioned by the surrounding environmental characteristics, the predictions upon which these two documents are based are essentially irrelevant for the "newly added areas" of the San Juan Basin which until 1985 was a geologically and culturally defined area. Either real data or a completely new predictive model is going to have to be developed for the "new area" or both the BLM and any coal operation are going to be very surprised when they compare reality to their predictions.

No predictive model of archaeological site locations will predict the location of sites which are very much different than those which formed the initial data base. Section 110 of the National Historic Preservation Act requires Federal agencies to establish programs to locate and inventory all potentially eligible properties "under the agencies ownership". In addition, these agencies are to assure that no such property is "inadvertently...damaged". The BLM should be gathering real data as a multiple use agency by conducting surveys in order to make a valid assessment of what is under their jurisdiction.

Sincerely,

John D. Schelberg
John D. Schelberg, PhD
New Mexico Archaeological Council

CONSULTATION AND COORDINATION

40



State of New Mexico
OFFICE OF THE
Commissioner of Public Lands
Santa Fe

PO BOX 1148
SANTA FE, NEW MEXICO 87504-1148

JIM BACCA
COMMISSIONER

May 9, 1985

Mr. Jack D. Edwards
Project Leader
Bureau of Land Management
Division of EIS Services
555 Zang St. First Floor, East
Denver, CO 80228

Dear Mr. Edwards:

As the Commissioner of Public Lands for the State of New Mexico, I find that the state public coal lands and policies are inextricably linked to those of the federal government. I have reviewed with special interest, therefore, the Draft Supplemental Environmental Impact Statement for the federal coal management program. My comments are as follows:

- A. Chapter 3 of the document indicates that there is no need for the additional leasing of federal coal (with exception of bypass tracts), and I recommend that none be leased until the additional conditions below are met.
An overabundance of leased federal coal can depress the value of the state coal lands, thus depriving the state's beneficiary institutions of needed income.
- B. There is a need for a useable coal leasing program to be developed. Future federal coal leasing can be done more smoothly if the proper leasing vehicle can be designed. Attempts to initiate leasing in haste and for extravagant amounts have failed, but more modest and timely leasing could occur if the program could be developed now. A smoothly running federal program will help to develop the State Lands coal reserves.
- C. During the present and near-term future, while both market and demand are languishing, a vigorous program of exchange and consolidation should be pursued. The result of this program would be that presently unmineable, uneconomic, or environmentally sensitive leases would be consolidated into leases that do not suffer these disadvantages. State tracts which were included in or adjacent to such areas would be more likely to generate revenue than they are now.

40-2

Jack Edwards
May 9, 1985
Page -2-

D. Consolidation of the leases mentioned above will be more rapid, and choice of better sites will be enhanced if "diligent development" requirements are not altered.
Except as modified by the remarks above, the State Land Office generally supports the additional comments of the other agencies of the State of New Mexico.

Sincerely,

Jim Bacca
JIM BACCA
COMMISSIONER OF PUBLIC LANDS

RESPONSE TO COMMENT LETTER 40

40-1 The commenter has provided several considerations in the design and selection of a leasing program. Chapters 1 and 2 contain a full discussion of these considerations in the context of the history of the federal coal leasing program, the purpose and need for a leasing program, and the Proposed Action and alternatives.

40-2 The Department of the Interior lacks the authority to conduct lease exchanges without specific legislation. This lack of authority precludes consolidations encompassing federal coal that is not now leased.



41
United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
WASHINGTON, D.C. 20245

IN REPLY REFER TO:
Environmental Services

MAY 10 1985

Memorandum

To: Project Leader
Bureau of Land Management
Denver, Colorado

From: Chief, Environmental Services Staff

Subject: Review of Draft Environmental Impact Statement for the Federal Coal Management Program

Enclosed are the Bureau's Billings Area Office comments for you information/action.

Attachment

George R. Farris
George R. Farris

COMMENTS AND RESPONSES

UNITED STATES GOVERNMENT
memorandum

DATE: APR 2 1985

REPLY TO: Land & Minerals, Code 360

SUBJECT: Draft Environmental Impact Statement Supplement for the Federal Coal Management Program

TO: Director, Office of Trust Responsibilities
Attention: Chief, Environmental Services Staff

From: Billings Area Director

This office has reviewed the subject supplement and wishes to provide the following comments:

1. The draft EIS does a good job of identifying Indian concerns and issues that have been expressed over the past years. The draft EIS, however, only lists tribal concerns. There is no discussion of the impacts upon these identified concerns and issues.

41-1

2. Page 173. The draft EIS, in reference to Class I Air Quality, states that "only the Fort Peck and Northern Cheyenne Tribes have voluntarily requested this stringent standard be applied." It should be noted that Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation have been granted a Class I Air Quality redesignation status.

41-2

3. The Bureau of Indian Affairs is very much concerned with the possible devaluation of Indian coal by conducting Federal coal sales near Indian reservations. It had been demonstrated that Federal coal sells for less than coal on the private market. Large sales near reservations can pull potential markets from reservation minerals to off reservation minerals.

41-2a

4. Unsuitability Criteria. The mining of agriculturally used alluvial valley floors is a criteria which could seriously impact reservation lands. We agreed that Criterion 19 be retained and applied to make determinations to retain or eliminate alluvial valley floors. We do suggest that alluvial valley floors should be better defined.

41-3

5. Water is a very serious issue with Indian tribes as well as State and Federal governments. Indian tribes often have prior rights to the usage of water that may flow through, lie adjacent to, or lie upon or beneath the surface of the land. Careful studies and discussions with these tribes must be effected prior to any action that may disturb or deplete these water supplies.

Richard K. Hines



Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

OPTIONAL FORM NO. 10
REV. 7-78
GSA FPMR (41 CFR) 101-11.6
5010-107

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 41

41-1 The Native American Issues section conforms to the scoping guidance for the supplemental EIS:

"Impact issues of concern to Native Americans will be discussed in a generic fashion on a broad basis. Any unique issues of concern for a particular region, reservation, or tribe will also be noted. This section will raise issues or concerns that may have to be considered (by reservation or tribe) on a site-specific basis in the regional EIS." (USDI 1984b).

41-2 The text has been corrected as suggested.

41-2a The supplemental EIS deals with alternative frameworks for a federal coal management program. Region-specific issues, such as the one raised in this comment, will be addressed locally after the Secretary of the Interior makes his decision on whether to continue the existing program or to adopt another. If the Secretary continues to use regional coal teams, tribes will be asked, as they have in the past, to participate on the teams and make their interests known through that forum.

41-3 A definition of alluvial valley floor has been added to the Glossary.

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Northern Arizona University · FLAGSTAFF, ARIZONA 86011

ARCHAEOLOGY LABORATORY
DEPARTMENT OF ANTHROPOLOGY
BOX 15200

April 26, 1985

Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
555 Zang Street
First Floor East
Denver, Colorado 80228

Dear Mr. Edwards,

As an ex-Coloradoan, and having also expended a fair amount of time in Utah and New Mexico, I read your Draft EIS for the Federal Coal Management Program with interest. Of particular interest to me because of my specialty are the cultural resources. The section beginning on p. 233 sounds as if you and your staff recognize many of the potential problems, but I fail to see much in the way of adequate solution. In my opinion, every area to receive either direct or indirect impact should first be examined thoroughly for cultural resources. Anything that looks promising should then be excavated by competent individuals before the looters arrive. Financing could either be arranged through the Federal Coal Management Program, or through individual lessees.

I hope the above is timely enough to be of some help - I just received your draft EIS recently after an absence from my office. If we can be of help in any way, feel free to call upon me.

Sincerely,

J. Richard Ambler
J. Richard Ambler
University Archaeologist

PHONE: (602) 525-3038 / 525-3039

COMMENTS AND RESPONSES

RESPONSE TO COMMENT LETTER 42

42-1 Federal cultural resource protection laws protect cultural resources from direct and indirect impacts. Consultation with the State Historic Preservation Officer and the Advisory Council on Historic Preservation is required under the National Historic Preservation Act of 1966, as amended (Public Law 96-515), and under federal regulations (36 CFR 800) relating to cultural resource consideration and protection in federal actions. Such consultation would be conducted during regional EIS preparation and decisionmaking on federal coal leasing as well as during tract-level EIS preparation. Direct and indirect impacts would be examined and mitigated through this process and by these laws and regulations, including unsuitability criterion 7 of the Surface Mining Control and Reclamation Act of 1977, as amended. See Appendix A-11 (Cultural Resource Inventory Procedures and Consultation) in the San Juan River Regional Coal Final EIS (BLM 1984c) and pages 1-21 of the Final Environmental Statement--Federal Coal Management Program (BLM 1979a).

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ENVIRONMENTAL POLICY INSTITUTE

9 May 1985

Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
555 Rang Street
First Floor
Denver, CO 80228

Dear Mr. Edwards:

Thank you for the opportunity to review and comment on the Department of the Interior's Draft Environmental Impact Statement for the Federal Coal Management Program. What follows is our comments regarding several issues of concern.

It is the opinion of the Environmental Policy Institute (EPI) that BLM's Proposed Action is not the preferred action with respect to setting a course for the future of the federal coal management program. We believe that BLM's Proposed Action is potentially subject to some of the problems that currently plague Secretary Watt's coal leasing program. In particular, we worry that the leasing for reserves will still occur. At this point in time, EPI believes there is NO justification for the leasing for reserves.

With the relaxation of diligence standards and the redefinition of logical mining units, the net result of these changes will ultimately be to lessen the penalty of holding on to tracts that may be commercially unviable in today's market conditions. This could still make it feasible and attractive for some companies to push for the acquisition of coal reserves on a speculative basis. Given these conditions, it would be difficult to tell whether industry expression of interest in obtaining new federal coal tracts was based on a real desire to develop these tracts, or whether they are just interested in tying them up to prevent development by a competing operator.

Until the questions of processing remaining Preference Right Lease Applications (PRLAs), determining what coal is available and how much coal will be mined are settled, EPI supports the belief that there should be NO new federal coal lease sales. Exceptions to this scenario would only include carefully screened emergency and by-pass leases. For these reasons, we reject BLM's contention that the Proposed Action is the preferred action.

Instead, EPI believes that Alternative #3 (Preference Right and Emergency Leasing) provides the most sensible approach for the foreseeable future.

One feature of the Proposed Action does have some merit and should be incorporated into Alternative #3. Development of long-range coal consumption and production analysis, together with the models needed to support forecasts would be a useful tool to put into place. With this capability, the Department of Interior would be able to make decisions on the need for future leasing of federal coal in light of changing conditions with respect to national energy trends and production capability of current mines or future mines on leases currently held.

However, in developing scenarios for future demand and production capacity, it is unclear in the EIS whether proper assumptions and factors are being made. On page 68, one of the scenarios mentioned makes twin assumptions of national acid rain legislation being passed and cheaper transportation (i.e. coal slurry pipelines) being available. It would be a mistake to assume that even if acid rain legislation did pass which focused on stack emissions from coal-burning power plants, that it would necessarily mean new and expanded markets for low-sulfur western coal in the Midwest. Clean coal technologies and new higher efficiency industrial boilers may make the continued use of higher sulfur eastern coal economically attractive and environmentally acceptable. At the same time, public opposition to coal slurry pipelines, especially pipelines which would compete with scarce western water sources, remains strong.

We thank you for the opportunity to comment on this draft report and we look forward to the publication of the final EIS.

Respectfully,

Jennifer L. March

Jennifer L. March
Assistant Director
Citizens Mining Projects

RESPONSES TO COMMENT LETTER 43

- 43-1 The Department of the Interior has developed proposed procedures to screen industry expressions of leasing interest. The intent is to gauge the seriousness of interest and the prospects for development of lands covered by such expressions. (See Appendix 6.) Should the Secretary of the Interior choose the Proposed Action, the regional coal teams would use the screening procedures to help ensure that expressions represent legitimate interest in developing federal coal when deciding whether to delineate or select tracts for further study.
- 43-1a The commenter's views are noted. The Department of the Interior's Proposed Action is not a program to lease federal coal but a program to maintain a management framework that would allow informed decisions to be made on whether a need exists to lease. It is a mistaken assumption that the Department has plans to lease coal regardless of market conditions, for a three-tiered system of market analysis has been established that will, if formally adopted by the Secretary of the Interior, provide the data on estimated coal demand forecasts and supplies (capacities) needed to make reasoned judgments as to whether coal leasing should proceed.
- 43-2 The forecasts for the final supplemental EIS have not used proposed acid rain legislation or nonexistent coal slurry pipelines. The text has been revised to remove references to these items.

CONSULTATION AND COORDINATION

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AMERICAN
MINING
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SUITE 300
1700 K STREET, NW
WASHINGTON, DC 20006
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May 9, 1985

Mr. Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
555 Lang Street, First Floor East
Denver, Colorado 80228

Dear Mr. Edwards:

Attached hereto are the comments of the National Coal Association (NCA) and the American Mining Congress (AMC) on the "Draft Environmental Impact Statement Supplement for the Federal Coal Management Program," published for comment on February 8, 1985. This document also contains comments on the various documents which the Department published in conjunction with and supplementing the draft EIS.

For your clarification, these comments were developed by the Coal Leasing Committees of the NCA and AMC who together represent most of the nation's producers and suppliers of bituminous coal and who have played a vital role in the federal coal leasing program. We welcome the opportunity to comment on these draft proposals which will have a significant impact on a large sector of the coal producing industry.

In the draft it is suggested that commentators should pay particular attention to the materials presented in Appendix 6, which contains BLM proposals for modifying the program in accordance with the recommendations of the Commission on Fair Market Value Policy for Federal Coal Leasing and the Office of Technology Assessment. Rather than restate the extensive comments that we have previously filed with the department we will merely reference them while focusing on: (1) Chapter 2 - Description of the Proposed Action and Alternatives; (2) Chapter 3 - Production Forecasts; and (3) Chapter 4 - Description of the Environment and Environmental Consequences.

GENERAL COMMENTS

At the outset, we would like to congratulate the Department of the Interior ("DOI") on the quality of the draft EIS. It is clearly a thoughtful and conscientious attempt by the draftsmen to reaffirm the proposed program and analyze the alternatives that were considered.

While we do have a few problems with certain sections of the draft, our concerns are primarily with the laws and regulations that form the framework within which the drafters were forced to operate. In large part we are concerned that the regulatory revisions which have been proposed, and upon which we have commented, may again result in the development of a program which is systematically biased against federal coal development. Clearly, a number of the positive steps taken through the 1982

regulatory revision have been reversed under this recent revision effort and as a result one must question the wisdom of investing in a federal coal lease given the current environment.

We do not believe this result is consistent with the policy of the President, the public interest or the national policies established by the Congress. We, therefore, remain concerned that the department not move in such a direction as to jeopardize the future of the federal coal leasing program.

Sincerely,

Bruce H. Watzman

Bruce H. Watzman
Director, Leasing
National Coal Association

Gregory E. Conrad

Gregory E. Conrad
Staff Counsel
American Mining Congress

BHW/CEC/all
Attachment

COMMENTS AND RESPONSES

Chapter 2 - Description of the Proposed Action and Alternatives

Our review of the draft supplemental EIS indicates that BLM has done an excellent job in Chapter 2 of delineating and thoroughly explaining the proposed action and the three alternatives. BLM's analysis is clear and understandable and therefore presents the reader with a complete overview of the department's anticipated actions as required by the National Environmental Policy Act (NEPA).

BLM has also done a commendable job of comprehensively analyzing the full range of environmental impacts that may result under the proposed action and the three alternatives presented in the draft. We are especially encouraged by Interior's finding that a substantially lesser impact on the environment will occur under the proposed action in view of the revised coal production figures. Interior's analysis appears well supported and the findings seem substantiated by the forecasts that have been utilized.

There are several general statements made by the BLM in Chapter 2 that we wish to address. With regard to BLM's reference to the threshold concept, we refer you to our comments dated today (May 9) regarding the proposed rulemaking implementing various OTA recommendations, including the threshold concept.

With regard to the need for federal coal leasing and DOI's production forecasts, we refer you to our comments on Chapter 3. In general, we believe there are certain policies that should be kept in mind by the BLM in the preparation of the final supplemental EIS.

One of the most important, from our perspective, is the value of coal production vis-a-vis environmental protection. We assert that both are important goals to be achieved in the federal coal management program. The proper management of federal coal resources is important to the overall national energy picture. Moreover, the United States is significant both as an energy producer and as a consumer in the entire global picture. Therefore, the results of any changes adopted should be considered with respect to their effect on the domestic economy, the national defense, U.S. foreign policy and the value of the dollar. If the effect of the coal program operated by the government is inflationary or appears to place more importance on values such as aesthetics, recreation or wildlife protection than on energy production, consideration should be given to the ability of the United States to carry out the objectives of our national energy program.

In 1979 the industry filed comments with the DOI on the agency's Draft Programmatic EIS, upon which the current draft supplement is based. At that time, it was stated that:

Existing federal laws and applicable Department regulations ensure that the development of future federal coal leases will occur promptly and only under acceptable environmental conditions.

We believe this is as valid in 1985 as it was in 1979 and we are concerned that the supplement not place too much weight on the environmental aspects of coal development in the context of the federal coal management program. By incorporating extensive provisions relating to environmental protection into the coal program at the pre-lease stage, BLM would essentially be ignoring the effect and congressionally intended role of the Surface Mining Control and Reclamation Act of 1977 (SMCRA). As a result, BLM could well require many critical environmental judgments at the pre-lease stage, whereas such determinations cannot realistically be made until mine plans and permits have been formulated.

DETAILED COMMENTS

OF THE

NATIONAL COAL ASSOCIATION

and

THE AMERICAN MINING CONGRESS

on the

DRAFT ENVIRONMENTAL IMPACT STATEMENT

FOR

THE FEDERAL COAL MANAGEMENT PROGRAM

May 9, 1985

CONSULTATION AND COORDINATION

rationale behind the economic forecasts.

Table II compares BLM's electricity consumption forecasts with those of NCA and DOE. Once again, for the 1985 to 1990 period, BLM's base case forecast falls within the group's expectations. For the period of 1990 to 2000, BLM's optimism with respect to economic growth leads to electricity consumption growth rates significantly higher than one would expect in a base case.

We take exception with these electricity growth rates not because of the level of growth, but more importantly, the lack of regional detail. Without regional detail, it is next to impossible to assess the reasonableness of BLM's assumptions and results for the electric utility market. Because they are so central to coal leasing policy, BLM's electric utility market results and assumptions should be presented in as complete a form as possible in the final report. We do not feel this is an unreasonable request given the fact that the NCM output contains the necessary regional detail.

Table III compares the BLM base case coal consumption forecast with those of NCA, DOE, and DRI. Using the criteria of representativeness for reasonableness, BLM's aggregate coal production forecast does fall within the group's expectations. But, once again, BLM fails in its report to provide sufficient detail on regional production patterns and their linkage to coal consumption by major market. This detail is absolutely essential to interpret the impact of future coal use on BLM's leasing plans.

Finally, BLM does not set forth in sufficient detail the underlying coal production capacity limits under the No New Federal Leasing constraint. Given the contentiousness of the debate over coal leasing, every effort should be made to explicitly display the role of federal leases in future coal supply. Fortunately, DOE's NCM allow for a detailed buildup of regional coal supply curves. In the final report, BLM should exhibit regional coal supply curves for the forecast period and beyond the year 2000 so as to capture end-effects. These curves should embody both private and federal coals and carefully delineate the conditions under which federally coal are added to the supply curve.

Chapter 4 - Description of the Environment and Environmental Consequences

pg. 188 Fourth paragraph. The DES states that smoke from the burning of cleared vegetation would be a major air pollutant. Because the burning of brush is not a standard procedure except where the native vegetation is trees and heavy brush, it should be noted that this will be a major emission only in localized areas for very short periods of time.

pg. 190 First paragraph. It should be noted that the Environmental Protection Agency is developing proposed standards for particulates less than 10 microns in diameter.

pg. 191. While we found the Environmental Impact Statement to be consistent with many of the actual conditions existing in the regions reviewed, we are concerned with Table 4-11 entitled "Total Suspended Particulates" found on page 191. This table purports to show percentages of particulate emission change for all regions.

The statement further notes in Appendix 4 that EPA emissions factors were utilized in the preparation of Table 4-11.

NCA, on April 4, submitted the enclosed report by the TRC Environmental Consultants, Inc. in response to EPA's request for comments on the Guideline on Air Quality Models (revised). The report (copy attached) entitled Quantification of Uncertainties of EPA's Fugitive Emissions and Modeling Methodology at Surface Coal Mines demonstrates that

Should BLM delve into an analysis of leasing levels as they affect the environment, the agency should give due recognition to the normal operation of the marketplace. Recently, much has been made of the adverse effects of leasing too much coal. We contend that excess leasing is not harmful to the environment; leases issued but not developed due to the lack of market demand do not adversely affect the environment. There is no land disturbance and land uses generally remain as if the leases were not issued.

The coal leasing program that was the subject of the 1979 EIS was predicated on three broad concerns. First, our nation faced serious energy problems, given our then declining oil and gas reserves. Second, the previous program was viewed as failing to adequately address the concerns perceived by the department at that time. And third, Congress found critical flaws in the management of the program. While no program can be designed to adequately address these concerns to everyone's satisfaction, it is imperative that the DOI strike a much needed balance between those committed to development of our vast federal coal reserves and those committed to its preservation. We believe the Proposed Action achieves this balance and support the department's decision to implement the actions contained therein.

Chapter 3 - Production Forecast

Our comments on Chapter 3 refer to the "Coal Production Technical Forecast Report," which is an update of forecasts provided in Chapter 3. According to its author(s), the report should be viewed as an interim update, not only of the initial runs of the Department of Energy's National Coal Model (NCM) to the year 2000, but also of the forecasts for the years 1990 and 1995. The final coal programmatic EIS Supplement (FEIS) will provide the final update to this analysis. It is this final analysis that will provide the basis for the long-term market analysis described in the proposed leasing program.

The interim report reflects a level of completeness and balance commensurate with the analysis in its present stage of development. Most of the analytical pieces are now in place to do a first rate final analysis provided much more care is taken in explaining both the numerous assumptions and results than was taken in preparing the present report. Our comments focus on these shortcomings. Several tables are included to support the discussion.

The BLM analysis centers on a base case forecast with high and low forecasts to capture the range of future uncertainty. The high case presently lacks internal consistency with the base case forecast in that transportation rates were lowered significantly and without sufficient rationale and because acid rain controls were arbitrarily imposed. As such, the high case is really more of a conditional projection than a forecast. Therefore, we chose to exclude it from the main discussion for these reasons and because its GNP and electricity growth assumptions are overly optimistic. BLM should make every effort to eliminate these inconsistencies in its final report.

Overall, we find BLM's base case assumptions on GNP, electricity consumption and coal use growth to be reasonable. Notably, GNP and electricity assumptions are given on a national rather than a regional basis. Table I compares BLM's GNP growth rates with those of DOE, NCA and Chase Econometrics. Clearly for the period 1985 to 1990, BLM's GNP base case growth rates fall within the group's expectations. It is for the periods beyond 1990 that BLM's GNP forecasts remain rather bullish. This bullishness does not limit the effectiveness of BLM's base case forecast which in fact is more of a planning scenario than a forecast. In the final report, BLM should discuss more fully the

44-8 EPA's recommended methodology for determining ambient concentrations in the vicinity of surface coal mines is fundamentally flawed and that its use results in substantial errors in predicted 24-hour and annual particulate concentrations. Specifically, EPA's methodology - computation of emission rates with AP-42, Supplement 14, emission factors and modeling with ISC - causes both random and systematic errors. The TRC report concludes that the random errors resulting from use of EPA's methodology, for three different hypothetical mines, range from a factor of 2.9 to 4.3 for 24 hours TSP concentrations and from a factor of 2.7 to 3.8 for annual TSP concentrations. The report also found that systematic errors in the agency's methodology may result in an over-prediction of TSP concentrations by a factor of 3.7.

In short, the TRC Report demonstrates that EPA lacks the ability to accurately model fugitive particulate emissions from surface mines. As a consequence, we question whether Table 4-11 warrants serious consideration in the evaluation of alternatives.

pg. 207 Fifth paragraph. The statement that "overburden removal would also bring to the surface unfavorable plant growth and in some cases toxic materials" (sic) ignores the fact that surface mining regulations require that toxic-forming materials shall be adequately covered with antitoxic material or treated to control the impact on surface and groundwater and to minimize adverse effects on plant growth (30 CFR Part 816.102 (f)). While unfavorable plant growth and toxic materials may in fact be brought to the surface, the surface miner is required to cover or treat these materials.

pg. 208 First sentence. The statement that "Some small localized areas would require continued follow-up to ensure adequate erosion control and revegetation" is misleading. Earlier on page 207 in the third paragraph it is suggested that monitoring and maintenance programs are needed to ensure timely and effective reclamation. Is the statement on page 208 merely a reiteration? Or is it suggested that "follow-up" will be required on a continuous basis? If the latter is the case, it should be pointed out that this would constitute revegetation failure since the determination of revegetation success must occur at a single point in time. If continual monitoring occurs, the permittee or regulatory authority would be forced to reclaim the area again so as to remedy the situation and hence reestablish revegetation success (and consequent release of the performance bond that is tied thereto).

pg. 212 First sentence. The statement should read "Much of the good cropland in the west, including prime farmland, occurs on alluvial valley floors. The previous statement was false."

pg. 260 First paragraph. The author's assumption that replacement waters will generally come from wells tapping deeper aquifers is not supported by practical experience. Several replacement options exist and have been historically used by mine operators depending on local circumstances. Similarly, the costs of operating and maintaining these replacement sources is quite variable. The author's statement leaves the impression that these costs will always be higher, thereby placing an unfair burden on the local water user. This section should be changed to read:

"Replacement supply options include drilling of deeper wells, relocating wells to adjacent undisturbed areas of building surface impoundments for runoff retention. Depending on the option chosen and local site conditions, the expense to the water user of operating these replacement supplies may be higher or lower than their current operating costs."

pg. 329 Air quality methodology. Old emissions factors are used rather than EPA-

Table I
FORECAST COMPARISON
(AAGR Percent) 1/

GDP	1985-1990			1990-1995			1995-2000		
	Low	Base	High	Low	Base	High	Low	Base	High
MCA	1.5	2.5	3.0	1.4	2.3	3.0	1.3	2.2	2.9
DOE	2.1	3.1	3.9	1.9	2.3	2.9	MA	MA	MA
Chase Econ. *	2.3	3.1	3.6	2.1	2.7 *	3.3	MA	MA	MA
BLM	2.6	2.9	3.2	2.6	2.9	3.2	2.6	2.9	3.2
DBI	MA	MA	MA	MA	MA	MA	MA	MA	MA

1/ AAGR = Average annual growth rates.

* Forecast period used: 1990-1994.

Table II
FORECAST COMPARISON
(AAGR Percent) 1/

ELEC. GEN.	1985-1990			1990-1995			1995-2000		
	Low	Base	High	Low	Base	High	Low	Base	High
MCA	1.7	2.5	2.9	1.5	2.3	2.8	1.4	2.2	2.5
DOE	2.4	3.3	4.0	1.9	3.1	4.3	MA	MA	MA
Chase Econ. *	MA	MA	MA	MA	MA	MA	MA	MA	MA
BLM	2.3	3.0	3.5	2.3	3.0	3.5	2.3	3.0	3.5
DBI	MA	MA	MA	MA	MA	MA	MA	MA	MA

1/ AAGR = Average annual growth rates.

* Forecast period used: 1990-1994.

Table III

FORECAST COMPARISON
(Million Tons Per Year)

PRODUCTION (ALL MARKETS)	BASE CASE			
	1985	1990	1995	2000
MCA *	884	955	1,140	1,365
DOE	899	1,057	1,221	MA
Chase Econ.	MA	MA	MA	MA
BLM	900	972	1,229	1,367
DBI	903	1,036	1,166	1,385

* Preliminary MCA Staff forecast

CONSULTATION AND COORDINATION

44-13 approved factors published in AP-42 (Compilation of Air Pollution Emission Factors), Supplement 14, pg. 8-24-1, published May 1983. The accepted methodology for calculating air quality impacts should be used in the EIS.

44-14 pg. 330 Fourth paragraph, first sentence. Because computing total emissions from a mine based on mine production is a very crude methodology, this sentence would be more accurate if it read: "Because the emissions are normalized on the basis of mining 1 million tons of coal per year, regional emissions can be estimated simply by multiplying by a predicated coal production rate factor."

44-15 pg. 343 Fourth paragraph. The statement suggests that revegetation failure has occurred "at many sites" because of clayey materials. While research has shown that there is a general correlation between clayey materials and revegetation failure, there are a number of off-setting revegetation techniques such as supplemental irrigation, mulching, and surface manipulation. Contrary to the implication of this paragraph, revegetation failure has been documented to be the result of clayey materials at very few sites.

44-16 pg. 344 First paragraph. This paragraph suggests that, because of unique sets of soil forming processes, the original soils would be a requirement for long-term successful restoration. This suggestion ignores the fact that following surface mining the unique combinations of contour, microclimate, slope, position, soil texture, parent material, etc. have all been altered. It is therefore logical that the unique set of factors contributing to reclamation success will have been altered also. Furthermore, this paragraph ignores the common ecological observation that following major disturbance (e.g., sedimentation, deep plowing, etc.) land productivity increases. We suggest that, because the observations made in this paragraph are false and misleading, the paragraph be eliminated.

44-17 pg. 352 Second paragraph. Neither Congress nor most state legislatures have made it "the goal of the regulatory authorities...to reestablish native plant communities to the greatest degree possible." A more accurate assessment of the mandate given most regulatory authorities would be to ensure that the land affected by mining is restored to a condition capable of supporting the uses which it was capable of prior to mining and to establish a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area and capable of self-regeneration and plant succession.

pg. 354 First paragraph. The second sentence should be revised to read:

44-18 Irrigation was observed as an operating procedure only at the Navajo and San Juan mines in New Mexico where powerplant cooling water for irrigation is readily available.

Although water is also used for powerplant cooling, the same water is not necessarily used for both cooling and irrigation.

44-19 The last sentence in that paragraph is misleading. Vegetation dieback following removal of irrigation is both expected and planned for. The author's suggestion that this is "significant" implies revegetation failure. Failure of revegetation following removal of irrigation has not been proven.

It should be noted that the EIS sets out a general outline of what is required by the Surface Mining Control and Reclamation Act (SMCRA) and the regulatory programs established pursuant to the act. While the discussion of the mining and reclamation

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requirement appear to be adequate for the EIS and the matters treated therein, it should be kept in mind that the discussion is not precise as to many aspects of the regulations and should not be relied upon as definitive in any respect. However, the EIS does paraphrase the regulations and will provide the layman with a general understanding of the mining and reclamation requirements that set forth the broad range of environmental protection standards required of the coal industry today.

44-20 In the discussion of Surface and Groundwater effects, the EIS appears to give recognition to the relatively small area of the watershed affected by a mine as to surface water impacts but not as to groundwater impacts. Our experience to date tends to indicate that in most instances even groundwater impacts will be limited to the mine and nearby associated areas and then mostly during active mining. Even where there is some "degradation," it appears to be minimal and does not affect the use of the water. The EIS continually mentions "degradation" from a pre-mining condition without clearly setting forth the pre-mining use and the effect on that use. Admittedly, in some instances depending upon site-specific conditions there could be more severe degradation which could temporarily require an alternate water supply from another spring or deeper aquifer. Long-term degradation can and is prevented by the proper planning and monitoring that is done today pursuant to SMCRA.

44-21 The adverse effects on watersheds and surface water flow are also overstated. Water flow is routed around disturbed areas and keeping pits dewatered is essential to continued production. The surface water is returned to the watershed as soon as it can be. The rerouting of surface flows is usually limited to the mine area and has little effect on the entire watershed. Admittedly, during mining there is some water loss and some increased use but the "adverse" effect does not amount to a loss of sufficient surface water for natural vegetation or other water use in the area. True, springs may be relocated in many instances in the immediate area of the mining, but will usually be reestablished in the same general area. The assertion that "degraded" groundwater may not return to pre-mining quality for hundreds or thousands of years is misleading. The reader is given the impression that after mining the groundwater in areas of mining it is hopelessly unusable for generations. Again, the extent of the drop in quality is insignificant as far as use is concerned. In most instances the effect on groundwater disappear within a short time after mining. To return precisely to the pre-mining condition is relatively inconsequential as far as the use of the water is concerned and to underscore it creates an unjustifiable misapprehension.

44-22 Another misapprehension is created by implying that coal mining has had a significant effect on the salinity of the Colorado River Basin. This is the result of irrigation, farming and increases in population unrelated to energy development. Certainly the use of water by the industry has had some effect, but it is immeasurable compared to the other causes. This is not to say that future coal mining should not be concerned with the salinity problem — it exists and will be addressed, but the coal industry should not be included as a major cause.

44-23 With respect to erosion, our experience indicates that in most instances reclaimed soils absorb and hold water for revegetation better than unmined soils. Also the EIS appears to overlook the need and benefit of pioneer species and the use of legumes and other nitrogen producing species. Many reclaimed soils can be improved and developed into good growth media through the use of these species. In the west on federal lands that have been overgrazed and poorly managed, the "topsoil" is often poor in quality and lower horizons enhance growth potential. Land shapes, terracing and windbreak can all be established in reclamation and provide improved erosion control. Some of these improvements should be highlighted in the EIS.

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COMMENTS AND RESPONSES

44-24 The reference in the discussion on Paleontological resources that some knowledge may be lost by investigation and study by unearthing the finds in mining rather than waiting for the discovery of new study techniques should be deleted. This position is untenable. No study could be undertaken in any field if this premise were adhered to. Furthermore, the opportunity to study paleontological remains is limited more by earth moving limitations (which mining provides) than by analysis techniques once they've been recovered.

RESPONSES TO COMMENT LETTER 44

- 44-1 The high production level is purposely more of a conditional projection to facilitate analysis of a worst-case situation. For this reason, the CNP and electricity growth assumptions were purposely optimistic for the high production level.
- 44-2 BLM generally agrees with this suggestion. Data adequacy standards or guidelines are needed for a broad range of subjects such as coal quality and amount, other mineral resources, biological resources, cultural and recreational areas, geographic and climatic features, and socioeconomic conditions. Although the guidelines will apply nationally, each regional coal team should be able to strengthen or fine tune the data adequacy requirements to reflect regional conditions and concerns. BLM believes requirements for data adequacy should be made public as soon as approved, but that formal public comment is not necessarily appropriate because these standards will be developed in an open forum.
- 44-3 The additional detail presented in the Production Forecast Technical Report (BLM 1985b) is included in the final supplemental EIS (see Chapter 3 and Appendix 8)...
- 44-4 BLM's forecast provides much more detail on the regional production than any of the other forecasts. The general coal flows out of the federal regions are also provided. More detail on consumption is provided in the final supplemental EIS.
- 44-5 The production capacity limits used in the analysis were estimated by the BLM field staff on the basis of their knowledge of each region. This method included estimates of economic feasibility but not a specific mine price. The capacity estimates were compared to the full National Coal Model supply curves for each region, which were truncated to correspond to the capacity estimates. Federal coal and the supply curves do not directly correspond. The only assumptions is that further portions of the supply curves would require more federal leasing. In many situations only a small amount of federal coal would need to be leased for a large amount of coal to become economical.
- 44-6 The text has been changed as suggested.
- 44-7 The text has been corrected as suggested.
- 44-8 The factors used are conservative and therefore present the worst-case analysis. The same method, however, was used in all cases and will give a fair comparison among alternatives.
- 44-9 See response to Comment 25-4.

CONSULTATION AND COORDINATION

44-10	Follow-up would be needed to determine areas where vegetation establishment and erosion control are not successful on the first attempt. More attempts would be needed until satisfactory reclamation conditions are achieved and certified by the landowner, regulatory agency, and applicant. Most commonly, areas needing more revegetation attempts are small and localized except where adverse storms and climatic conditions affect larger areas.
44-11	This statement has been clarified in the final supplemental EIS.
44-12	The text has been rewritten to include this suggestion.
44-14	The text has been clarified to state that the emission figures are regional estimates.
44-16	This paragraph provides a general discussion of soil formation as it relates to soil-forming factors. Complete restoration of the genetic (natural) soil profile is not possible or feasible. The objective of soil formation is to provide a favorable plant growth medium to restore premining soil productivity. See the Soil Reconstruction section for further discussion of soil reconstruction.
44-18	This sentence has been revised to reflect this comment.
44-19	This statement is based on Curry (1975) and experiences with the use of irrigation for reclamation in dry regions (Ries and Day 1978).
44-20	The draft supplemental EIS states that ground water impacts would be limited to areas "in and near surface mines." The term "degraded" is used to mean that the concentration of total dissolved solids is increased. The text has been changed to clarify the fact that degradation may not preclude a particular water use.
44-21	The draft supplemental EIS states that surface water quality and amount impacts are usually confined to the mine areas during active mining. The change in ground water quality greatly varies. In some cases, TDS concentrations many times the premining value were recorded. Such concentrations would significantly affect water use. In other cases, the change was not significant. The text has been changed to clarify the nature of this variability.
44-22	Many water uses in the Colorado River Basin considered insignificant in other basins are considered to significantly affect the river's salinity because of the degree of water use and the expense incurred by the United States for each 1 milligram/liter of salinity increase that reaches the Mexican border. BLM agrees that irrigation and increases in population unrelated to energy development have resulted in most of the salinity increase. This supplemental EIS, however, only considers coal mining, which could also significantly affect the Colorado River's salinity.

44-23	The information in your comment is expressed within the draft supplemental EIS. See Appendix 5, Soil Reconstruction (page 351) in the draft supplemental EIS for a discussion of soil-water relationships and soil productivity improvement and maintenance. See the Revegetation section (pages 351, 358, and 353) for a discussion of plant types and effective erosion control measures.
44-24	This statement has been deleted because the impact has not been determined to be significant.



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United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

ADDRESS ONLY THE DIRECTOR
FISH AND WILDLIFE SERVICE

Memorandum

To: Director, Bureau of Land Management
Acting Associate
From: Director, Fish and Wildlife Service
Subject: Draft Environmental Impact Statement Supplement (DEISS) - Federal Coal Management Program (EC 85/8)

MAY 28 1985

We have reviewed the subject draft environmental impact statement supplement (DEISS) and offer the following comments for your consideration:

General Comments

In general, we believe that the DEISS adequately identifies the changes that have been made or proposed for the Federal Coal Management Program and that the coal production forecasts in this DEISS are more realistic than those presented in the 1979 Final Environmental Statement (FES). Although impacts predicted in this DEISS are generally much lower than those predicted by the 1979 FES, due primarily to reduced coal production estimates, there are several issues and impacts that we believe merit further consideration in the supplemental FEIS. These issues are: impacts to air quality, particularly the generation of acid-forming pollutants resulting from the use of Federal coal; impacts to water resources, including mining impacts to aquifers, water needs for reclamation, coal processing and transport, and power plant operation; and the assessment of reclamation success on surface-mined western coal lands.

One of the major elements of the 1979 FEIS was the application of the coal unsuitability criteria. These criteria had, and we believe continue to have, the potential to greatly reduce many of the impacts of the Federal Coal Leasing Program. However, they are only mentioned briefly on pages 42-43 and in the appendix of the DEISS. Not only has the relative importance of the criteria been reduced, but the data bases essential for application of the criteria are not being utilized. It is not clear as to why the DEISS is being completed before the BLM report and recommendations on the unsuitability criteria are completed.

If the proposed action is to meet the currently stated objectives of promoting efficient and environmentally sound patterns of multiple resource use in western States, the following changes are suggested:

1. Emphasis on the application of the unsuitability criteria should be reinitiated.
2. An ongoing and systematic approach for identifying and filling data gaps should be developed.

COMMENTS AND RESPONSES

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45-1b | 3. Data base development and application of the criteria should be closely coordinated with other agencies.

The DEISS does not adequately address the issue of fee/lease exchange relative to the Fort Union Coal Region. Depending upon the alternative selected, exchanges could become a major ramification of the BLM's final action. If large-scale Federal coal leasing is eliminated in North Dakota, companies will likely initiate fee coal exchanges to lock up coal resource holdings. Fee coal exchanges are not a part of the Federal Coal Management Program and thus, are not subject to the basic environmental screens, including the application of the wildlife unsuitability criteria (since they are authorized under Section 206 of the Federal Land Policy and Management Act). The Secretary of the Interior must determine that transfer of ownership of the land or the underlying mineral resources on the land is in the public interest. If fee exchanges should become important, the impacts would be addressed in this document.

45-3 | The DEISS does not address "Species of Special Emphasis" as identified in national and regional resource plans of the FWS. Also, "migratory birds of high Federal interest" as developed cooperatively by FWS and BLM.

Specific Comments
Page 2

45-4 | The assessment of reclamation success is one of the major issues to be discussed in the supplemental FEIS. Appendix 5 was included to address this issue. While this appendix gives a good overview of reclamation objectives, the factors that affect reclamation, and the regulations that govern reclamation, there is very little information describing or evaluating reclamation techniques that have been used. We suggest that this appendix be expanded to include an assessment of reclamation success including current results based on research and experience from mines.

Pages 5 and 6

45-5 | The soils and vegetation section indicates that under the 1985 Proposed Action, there would be 65 percent less land disturbed (at the medium production level for 1990) than under the 1979 Preferred Program. However, under the wildlife section, it shows a 54 percent reduction in direct and indirect impacts to wildlife habitat from the 1979 to the 1985 Proposed Action at the medium production level in 1990. These figures should be explained in the DEISS.

Pages 7 and 261

45-6 | This DEISS projects water used at mines and by local inhabitants, but has dropped consideration of water used to transport coal and water used by power plants. Since these uses are directly related to coal production, we believe that they should be analyzed in the DEISS as they were in the 1979 FEIS.

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<p>Page 25, Item 5.(b)</p> <p>The Department's response stated: "the Department will direct BLM in consultation with the Geological Survey, the Fish and Wildlife Service (FWS), the Office of Surface Mining (OSM), and other appropriate agencies to develop standards for data adequacy and guidelines for application of these standards."</p> <p>Other than proposals and discussions as to the feasibility of developing such standards and guidelines, the FWS is not aware that such directives have been fully initiated. As these developments could significantly affect the environmental impacts of the proposed action, the supplemental FEIS should include a synopsis of these standards or guidelines. If their development cannot precede issuance of the supplemental FEIS, the final document should at a minimum describe the timing and procedures under which they will be developed.</p> <p>Page 26, Item 7.(c)</p> <p>While the original regulations allowed exceptions where there was only one unsuitability condition, the 1982 regulations allow exceptions regardless of how many unsuitability criteria apply to a given tract. This is another example of how the original environmental safeguards of the Federal Coal Management Program have been weakened. We recommend that the original regulations be readopted.</p> <p>Page 29, Table 1-7</p> <p>The revision that allowed the application of exceptions to tracts having more than one criteria should be added to this table.</p> <p>Page 33, Discussion Item 4: Floodplains Criterion 16</p> <p>Previously, this criterion provided consideration for the natural and beneficial values of floodplains. The FWS believes that this criterion is still needed for the program. We note that Section 522(a)(3)(B) of the Surface Mining Control and Reclamation Act of 1977 (SMCRA) seemingly provides sufficient justification for inclusion of language allowing for the consideration of the natural and beneficial values of floodplains (i.e., affect fragile or historic lands in which such operations could result in significant damage to important historic, cultural, scientific, and esthetic values and natural systems (emphasis added)). Additional support is also provided by the definition of "fragile lands" as defined in Federal Register 48(175):41351, which states: "Fragile lands means geographic areas containing natural, ecologic, scientific, or esthetic resources that could be damaged beyond an operator's ability to repair or restore or be destroyed by surface coal mining operations. Examples of fragile lands include valuable habitats for fish and wildlife . . . areas where mining may result in flooding environmental corridors . . .". Thus, the intent of SMCRA seems clear, and in our opinion, provides adequate justification for including the deleted language relative to the natural and beneficial values of floodplains.</p>	<p>Page 35, Table 1-8</p> <p>The statement under "Purpose" and "Major Relevance" should be revised to reflect that this Act requires Federal agencies to provide wildlife conservation equal consideration with other features throughout the planning and decision making processes.</p> <p>Pages 38-39, Table 1-9</p> <p>The FMS should be identified in the column "In Consultation With" in all cases where the functions as described would or may have an impact on fish and wildlife resources. Absence of FWS recognition in this regard is especially apparent under the "Postleaving-Premining Functions" and "Functions and Responsibilities During Mining Operations." Also, the FMS acronym is not listed at the bottom of the table (Page 39).</p> <p>Page 40</p> <p>The FMS conducts studies and monitors impacts to wildlife and endangered species in order to assess and predict the effects of coal-related activities on wildlife and their habitat. In addition to the above responsibilities, it should be pointed out that the Memoranda of Understanding between BLM and FWS; and the Office of Surface Mining (OSM), and FWS delegate additional coal-related responsibilities to FMS. These include protection of migratory birds, including eagles, and threatened and endangered species and their habitats. The Fish and Wildlife Coordination Act responsibilities of the FMS extend our involvement to Federally authorized activities that would affect streams or other bodies of water. The FMS also aids in identifying general wildlife situations and significant habitats and recommends wildlife issues that need to be addressed; provides recommendations during the land use planning process; recommends areas that are unsuitable for mining; provides comments on the adequacy of reclamation procedures relative to fish and wildlife resources; and recommends mine permit stipulations for fish and wildlife protection, mitigation or enhancement. These responsibilities should be included in the supplemental FEIS.</p> <p>Page 46</p> <p>This section should be revised to provide a layman's summary of the regulatory activities associated with discharges of dredged or fill material in all waters of the United States, including all adjacent wetlands (e.g., 404 permit and guidelines).</p> <p>Page 62, Table 2-1</p> <p>Given previous directives, it would seem that environmental protection should be included as a major objective of the proposed action.</p> <p>Page 72</p> <p>The proposal to include three science advisors as ex-officio members of the regional coal teams (RCT) is a good idea. We support this proposal and believe that it will lead to a better analysis of resource values and</p>
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COMMENTS AND RESPONSES

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over 200 endangered and threatened plants. A 1979 publication through Auburn University entitled, "Endangered, Threatened, and Special Concern Plants of Alabama" made some revisions and added 49 species to the unofficial list.

The following sentence should be added after the last sentence: "However, with regard to wetlands and riparian vegetation, the environmental performance standards require operators to avoid disturbances to, enhance where practicable, and restore, or replace these vegetation types."

Page 215

In the Wildlife Section, the Colorado squawfish, *Pygocentrus nattereri*, status endangered, is not listed. The Colorado squawfish could possibly occur in the San Juan River Basin in New Mexico and Colorado. This should be corrected.

The Gila trout, *Salmo gillae*, is not listed in the DEISS as endangered. It could occur in high mountain creeks in the Gila National Forest in Catron County, New Mexico. This should be corrected.

The Socorro isopod, *Thermosphaeroma thermophilus*, is not listed as occurring in the region. The Socorro isopod is listed as endangered and occurs in Socorro County in one location.

Page 216

Paragraph two seemingly needs revisions. For example, the endangered red-cockaded woodpecker has been recorded on several first-round lease tracts, and there have been several unconfirmed cougar sightings in Tuscaloosa County.

The introductory phrase beginning the second sentence, "Although no federally listed threatened or endangered plants occur within the region," should be deleted as it does not logically belong with the remainder of the sentence.

Page 217

It is pointed out here that browse ranges may be destroyed by mining and reclaimed with grass species. This type of reclamation could result in considerable loss of premining wildlife habitat. Such a loss is not consistent with provisions of SMRA and these losses are of considerable concern to FWS in the west. Reclamation of premining shrub density and diversity has proven difficult, if not impossible in arid areas. The success of shrub reestablishment and impacts of shrub loss should be discussed in Appendix 5. Appendix 5 would also be an appropriate place to discuss reclamation techniques that may enhance mined areas for wildlife habitat. The use of rockpiles shows promise for replacing nesting, denning and escape cover for several species. Leaving highwalls also shows promise for enhancing populations of cliff nesting species. Impoundments remaining after mining can also enhance wildlife populations. Use of these and other innovative techniques may offset the loss of similar natural features.

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conflicts early in the planning process. We also recommend that a representative of FWS be retained as an ex-officio member of the RCT to assist with unsuitability determinations, tract delineation, and ranking of wildlife values of proposed coal tracts.

Page 81

The next to the last sentence should read: "Although no market analyses would be conducted, RCT's could be retained to carry out consultation with the State and other affected agencies before lease sale decisions."

Page 121

Chapter 4 provides a discussion of the existing environment and environmental consequences of a scaled down coal program. The conclusion reached is that less coal mined will produce less impact, however, a quantitative value should be given.

Pages 186-194

This section discusses the general impacts of coal mining on air resources during the production phase. However, there is no discussion of the impacts to air quality caused by the use of the coal. Since most of the coal produced is used outside of the producing coal regions, these impacts will likely not be analyzed in the regional EIS's. Therefore, we believe that it is appropriate that air quality impacts resulting from coal use be discussed in this program level DEISS.

Page 201

Under the heading Soils and Vegetation, Threatened and Endangered Plants, the DEISS suggests that no populations of federally listed threatened or endangered plants occur within the San Juan River Coal Region. The known cactus, *Pediocactus knowltonii*, listed as endangered, occurs in gravelly-sagebrush dominated slopes at 6,000 to 6,500 feet in northeastern San Juan County, New Mexico.

The DEISS lists potential habitat for the Mesa Verde cactus, *Sclerocactus mesae* var. *verdae*, which is threatened, as occurring within the area. The Mesa Verde cactus has been documented as occurring in San Juan County, New Mexico, and Montezuma County, Colorado. This should be corrected in the text.

Page 202

This part should be revised to reflect Federal listings. Although there are no federally listed plants known to occur within the three-county Alabama subregion, the endangered green pitcher plant *Sarracenia oreophila* is known to occur in the northwestern Alabama counties of Marshall, Etowah, Cherokee, Dekalb, and Jackson.

Also, although Alabama does not have an official protected plant list, a 1975 symposium, utilizing a committee of botanists, developed a preliminary list of

CONSULTATION AND COORDINATION

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45-29 cont use of rockpiles shows promise for replacing nesting, denning and escape cover for several species. Leaving highwalls also shows promise for enhancing populations of cliff nesting species. Impoundments remaining after mining can also enhance wildlife populations. Use of these and other innovative techniques may offset the loss of similar natural features.

Appendix 1 --- Coal Unsuitability Criteria

45-30 The exceptions and exemptions for each unsuitability criterion are not provided. We recommend that they be added for each criterion, since the effectiveness of the criterion is significantly affected. Also, since there have been regulatory changes to the criteria, the "official" list of criteria, exceptions, and exemptions in a single source would be helpful.

Page 301, Next to Last Paragraph

45-31 We recommend that the regulatory criteria for designating lands unsuitable be either included in an appendix or referenced (e.g., Federal Register 48(179): Wednesday, September 14, 1983, Part 762.11).

Page 305-306, Regional Coal Team Membership and Other

45-32 The FWS, through its previous involvement as an ex-officio member of RCTs has made significant and timely contributions relative to the protection, enhancement, and mitigation of fish and wildlife resources, and has helped to balance the decision making process to ensure that fish and wildlife values are given equal consideration. We recommend that the FWS, as well as other affected Federal agencies, be specifically named as ex-officio members to RCTs.

Page 359

We support the proposal to add noncoal resources to the call for information at the beginning of land use planning and involving the public in this call. We also support the proposals on page 360 that would identify data inadequacies and inventory needs early in the planning process. A procedure should be developed to assure that these identified needs are fulfilled before such tracts are carried forward for further consideration.

Page 362, Table 4, Option 6

45-33 We recommend that a FWS representative be appointed as a science advisor in all cases to ensure equal consideration of fish and wildlife values and data needs in the decision making process.

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Page 363, Appendix 6, Table 5, Option 5

45-34 A BLM/OSM working group is proposed to suggest ways to search, extract, and apply mine plan data and to provide other technical assistance. We recommend that FWS be named as a member of this working group to provide technical assistance on fish and wildlife resource matters.

The FWS appreciates the opportunity to have participated in the review of this DEISS and looks forward to further coordination with BLM in this important program.

cc: ARD-HR, Denver, Region 6
(Attn: D. Hoffman)
ARD-HR, Albuquerque, Region 2
(Attn: A. Kinsky)
ARD-HR, Atlanta, Region 4
(Attn: R. Haynes)

cc: Directorated RF
DD Chron AHR
ES Files SP Files

FWS/ES:RFRITZ:jh:5-7-85/343-3245
Dsk: RFRITZ Docname: federal coal management

COMMENTS AND RESPONSES

RESPONSES TO COMMENT LETTER 45

- 45-1a The final supplemental EIS has been extensively changed to present a full discussion of the unsuitability criteria and their application. The unsuitability criteria discussion in Chapter 2 has been expanded, more background material is presented in Chapter 1, and Appendix 1 presents comments and responses on the report. A Review of the Unsuitability Criteria in Federal Coal Leasing (BLM 1983d). Appendix 1 also includes a copy of this report. In addition, the response to Category 13 in the Categorical Analysis of Response section of Chapter 7 deals with unsuitability criteria issues. The Secretary of the Interior's recommendation on the unsuitability criteria will be presented in the secretarial issue document on the federal coal management program following the publication of the final supplemental EIS.
- 45-1b See response to this comment in the Responses to Other Unsuitability Review Comments section at the end of Appendix 1.
- 45-2 Fee coal exchanges are subject to the environmental screens and the applying of unsuitability criteria, exceptions, and exemptions of 43 CFR 3461. For more discussion of fee coal exchanges, see Chapters 1 and 2 and the fee exchange policy draft in Appendix 9.
- 45-3 A paragraph has been added to each coal region section in the final supplemental EIS to include specifics of special emphasis.
- 45-4 The assessment of reclamation success is based on reliable research, including studies of 22 western coal mines at 17 locations in North Dakota, Montana, Wyoming, Colorado, Utah, Arizona, and New Mexico (Norton and others 1983). Appendix 5 has been expanded to include more current research results. It is not within the scope of this supplemental EIS to provide a detailed description and evaluation of reclamation techniques.
- 45-5 The figure "65 percent" is in error and should have been "54 percent." In the final supplemental EIS, however, the figure of "54 percent" has been changed because of revised production forecasts.
- 45-6 Water used to carry coal was precluded from the analysis by the assumption on slurry pipelines (page 160, paragraph 4 of the draft supplemental EIS). Water use by powerplants was not analyzed because it is beyond the scope of the program-level analysis (draft supplemental EIS, page 123, paragraph 2).
- 45-7 In consultation with other federal agencies and state governments, BLM is drafting field-level guidance for land use and competitive leasing procedures. These guidelines and handbooks will not be formally released until the Secretary of the Interior has made a final decision on the federal coal program. The suggestion that a panel of experts provide further assistance in interpreting data adequacy standards would accomplish what the science advisors assigned to the regional coal teams would be expected to accomplish.

- 45-8 In the environmental analysis prepared for the 1982 rulemaking, the Department of the Interior concluded that this change would have no significant impact to the environment.
- 45-9 Table 1-5 of the final supplemental EIS (Table 1-7 of the draft) has been changed as suggested.
- 45-10 See responses to these comments in the Responses to Other Unsuitability Review Comments section at the end of Appendix 1.
- 45-11 Table 1-9 of the final supplemental EIS (Table 1-8 of the draft) has been changed as suggested.
- 45-12 Table 1-10 of the final supplemental EIS (Table 1-9 of the draft) has been revised to more accurately portray Fish and Wildlife Service points of consultation.
- 45-13 The text has been changed as suggested.
- 45-14 The Department of the Interior considers the level of discussion on the requirements of the Clean Water Act to be adequate for a programmatic EIS.
- 45-15 As a requirement under a variety of laws, environmental protection would be required under any proposal to manage a federal coal leasing program. Table 2-1 has been revised as suggested.
- 45-16 No proposal has been made to change the regulations in 43 CFR 3400.4(d), which allow other agencies with special expertise to participate in regional coal team meetings. The Fish and Wildlife Service (FWS), along with other agencies, has significantly contributed to past regional coal leasing activities, and FWS's continued support and involvement are essential to the federal coal management program. Each regional coal team (RCT) has the discretion to appoint nonvoting members to support its activities. The Department of the Interior encourages the RCTs to use all available expertise, including the appointment of non-voting members.
- 45-17 Chapter 2 has been revised to note that, in the absence of a designated region, regional coal teams could be retained as a vehicle for consultation with the state and affected federal agencies before lease sale decisions.
- 45-18 Chapter 4 measures impacts for all regions, alternatives, time periods, and production levels for the following resources and conditions: socioeconomics, health and safety, air quality, soils and vegetation, minerals, and water use. The other resource categories are assessed qualitatively. Chapter 5 presents a general comparison of impacts projected for the Preferred Program of the 1979 final environmental statement (FES) (BLM 1979a) at the 1990 medium production level to impacts projected for the Proposed Action of the 1985 supplemental EIS at the 1990 medium production level.

CONSULTATION AND COORDINATION

- 45-19 See response to comment 27-38.
- 45-20-45-22 The supplemental EIS has been changed to reflect this comment.
- 45-23 The section referred to is a description of the affected environment, for which this comment is not appropriate.
- 45-24 The Colorado squawfish has been added to the endangered species list for the San Juan River Region.
- 45-25 The Gila trout has been added to the endangered species list for the San Juan River Region.
- 45-26 The Socorro isopod has been added to the endangered species list for the San Juan River Region.
- 45-27 The paragraph correctly states that the two listed species occur in the Alabama Subregion.
- 45-28 The sentence appears to be correct, and no change has been made.
- 45-29 The reclaiming of mined areas to premining habitats is too detailed to be covered in a programmatic EIS. These problems are best addressed in site-specific EISs, which can list desired native species to be planted. Appendix 5 discusses the success of shrub reestablishment. The paragraph has been revised to include this concerns about browse reestablishment.
- 45-30-45-31 See responses to these comments in the Responses to Other Unsuitability Review Comments section at the end of Appendix 1.
- 45-32 See response to Category 5, Science Advisors, in the Categorical Analysis of Comments section of this chapter.
- 45-33-45-34 These recommendations have been forwarded to the responsible BLM officials for consideration.

COMMENTS AND RESPONSES

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MAY 9 1985

Mr. Robert F. Burford
Director
Bureau of Land Management
U. S. Department of the Interior
Main Interior Building
Washington, D. C. 20240

Dear Mr. Burford:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement Supplement (DEISS) issued by the Bureau of Land Management (BLM) in February 1985 for the Federal Coal Management Program. We have also reviewed four additional BLM documents closely related to this DEISS. These are:

- 1) Production Forecast Technical Report, an updated appendix to Chapter 3; 2) A Review of the Unsuitability Criteria in Federal Coal Leasing issued in March 1985 as Appendix 1 to the DEISS; 3) proposed Rulemaking on Competitive Leasing and Environment, an amendment implementing recommendations of the Office of Technology Assessment which appeared separately by notice in the Federal Register and is analyzed in the DEISS as a part of the proposed action; and 4) BLM's Guide to Federal Coal Property Appraisal, prepared in response to the Linnoves Report. Our comments are highlighted below with detailed comments enclosed.

This programmatic EIS discusses generically the environmental impacts associated with leasing and surface mining activities. We believe that the DEISS adequately identifies and discusses the key impacts associated with the proposed program. However, since this programmatic document can only assess the broad, program level impacts, the relationship between this document and assessments tied from it which will assess site specific leasing proposals is very important. We are concerned that the DEISS does not fully establish this linkage or assess the important role which related program initiatives play in making the proposed program environmentally acceptable. These concerns should be addressed in the DEISS.

46-1a

The DEISS identifies in Table 1-6 a number of program initiatives which, if fully implemented, should result in improved analysis of the impacts associated with leasing activities in these tiered documents. Of particular importance are the initiatives related to completion of resource management plans (RMPs) prior to new coal activity planning, improved interagency coordination, supplemental guidance to clarify the RMP requirements and improve the planning data base, and the reinstatement of threshold analysis to address cumulative impacts. We believe that these initiatives are essential elements of the revised Coal Management Program and warrant further description and analysis in the Final EIS.

46-1b

As a related matter, we found the issuance of four separate documents, integrally related to the proposed action analyzed in the DEISS, confusing. Because the acceptability of the proposed program hinges on the integration and implementation of the initiatives contained in these various documents, we suggest that the Final EIS more clearly establish and comprehensively analyze their relationship.

46-2

In light of the pivotal role that the Unsuitability Criteria play in ensuring that environmental impacts are considered in leasing decisions, EPA has given considerable attention to the review of that separate publication, as reflected in our detailed comments. It is our understanding that comments regarding the Unsuitability Criteria will be addressed in the Final EIS Supplement for the Federal Coal Management Program. The Unsuitability Criteria Review is illustrative of our comments concerning the desirability of a more comprehensive discussion of all of the elements of the program.

A major conclusion from your Review of the Unsuitability Criteria was that "environmental characteristics not included among criteria can be examined during the application of the multiple resource tradeoff screen." We concur with the Review's recommendation that further guidance on the relationship and application of these screens is essential for this approach to be effective. Our review of the Unsuitability Review was based on the assumption that such guidance would be prepared and would discuss key resource considerations for which the inclusion of specific new unsuitability criteria was not recommended.

EPA has rated this DEISS EC-2 (Environmental Concerns - Insufficient Information). A copy of our rating system is enclosed. This rating reflects our concern that unless the initiatives identified in Table 1-6 and in the other related documents such as the Unsuitability Criteria Review are implemented, avoidable environmental impacts could result.

CONSULTATION AND COORDINATION

EPA welcomes the opportunity for continued interagency coordination with BLM to ensure that our concerns are addressed in the Final EIS and that the Federal Coal Management Program is implemented in a manner that is fully responsive to the National Environmental Policy Act and other applicable environmental statutes. We are pleased to provide the enclosed comments and to participate in this review. If your staff has any questions regarding our comments, please have them contact Yvonne Weber of my staff at 475-8797.

Sincerely,

Allan Hirsch
 Allan Hirsch
 Director
 Office of Federal Activities

Enclosures

The U. S. Environmental Protection Agency's (EPA) Detailed Comments on The Bureau of Land Management's (BLM) Draft Environmental Impact Statement Supplement (DEISS) for the Federal Coal Management Program

General Comments

The DEISS discusses generic environmental impacts associated with coal surface mining. We agree that site-specific impacts, their magnitude and proper mitigation measures related to water quality, air quality, solid/hazardous waste, and noise are best considered through environmental analysis at the activity planning level. It is unclear, however, whether the existing regional EISs are considered adequate or whether new or supplemental documents will be prepared. In either case we believe that the existing regional EISs should be reviewed to ensure that their analysis of site specific impacts is adequate.

We believe that emphasis placed on the role of the respective BLM Resource Management Plans (RMP) in the activity planning process is appropriate. We are hopeful, however, that the supplemental guidance currently being prepared by BLM will lead to improvements in the data base for these plans.

EPA is appreciative of the intent of BLM to reinstate the threshold concept whereby defined levels of resource use, production or development are established as maximum or minimum constraints in the resource management plan. Reinstatement and refinement of the threshold concept will help ensure that the cumulative impacts of development activities are considered in pre-leasing decisions. Similarly, we feel that the rechartering of the Regional Coal Teams will lead to improved decisionmaking.

The discussion of the Federal Land Policy and Management Act on page 41 and 42 should reflect the fact that Title II also requires "compliance with applicable pollution control laws, including State and Federal air, water, noise, and other pollution standards or implementation plans."

The discussion on page 71 of public notice and the opportunity to participate in resource management plan preparation should be expanded to include the scoping process prior to review of the proposed planning criteria which is followed by review of draft alternatives.

Air Quality

We agree that detailed air quality analyses are more appropriately made at the regional level of analysis. However, we suggest that a discussion be included in the final Supplement and in the program specific guidance that elaborates on when and how these detailed air quality analyses will be performed, including the techniques proposed to be followed.

On page 46, the description of the effluent limitations established under SHCRA programs for water discharged as a result of coal mining should read the "same as" rather "similar to" those adopted by EPA. Also on page 46, we suggest that the discussion recognize the need to comply with State water quality standards as well as permit limitations.

The underground disposal of mine wastes via a structure that is deeper than it is wide could constitute disposal into an underground injection well. Underground injection wells are regulated under the authority of the Underground Injection Control (UIC) Program pursuant to the Safe Drinking Water Act. Injection of wastes into abandoned mine workings may be subject to the permitting requirements of the Underground Injection Control regulations (40 CFR 144). Injection that may contaminate an underground source of drinking water is prohibited. The Final EIS should discuss the applicability of the UIC regulations. We further suggest that all facilities presently injecting or proposing to inject mine wastes into abandoned mine workings be inventoried by the appropriate state or EPA UIC authority. We will be happy to provide you with further details on this program.

Noise Impacts

We suggest that the discussion of noise impacts be expanded to include a more thorough treatment of on-site and off-site mining activity noise and appropriate mitigation measures. Relative to haul truck transportation noise, feasible mitigation measures to reduce noise impacts could include:

- o requiring mine operators to route haul trucks over roads that will cause the least disturbance
- o minimizing/avoiding night time hauling where sensitive receptors may be affected
- o requiring mine operators to properly maintain all equipment to ensure that noise is kept to a minimum
- o ensuring that no internal combustion engine used in the mining operation or coal hauling shall be operated without a properly operating muffler of a type recommended by the manufacturer.

In addition to transportation noise, the final EIS should address other mining-related noise such as blasting and mining operation. Blasting can perhaps be controlled through pre-blast warning signals, scheduling (no night time blasting), and regulations.

Reclamation Effectiveness

Since reclamation operations are a major factor in mitigating the adverse impacts of surface coal mining, we suggest that Appendix 5 on (pages 337-355) more fully discuss the effectiveness of recent or on-going reclamation projects at specific locations. Much of the appendix is a general discussion of techniques and of reclamation research, some of it

EPA also recommends that the final Supplement include a description of control measures that would be applicable at each coal mining region, including estimated control efficiencies for fugitive dust control. (State regulations often require such controls.) Although some erosion control surface reclamation measures are presented in Appendix 5, further measures to preserve air quality are available such as watering haul roads, covering stockpiles and setting material in open-bed railroad cars.

Additionally we suggest that the following minor air-related additions or corrections be made in the final document:

o The magnitude of expected impacts of the blasting emissions listed and mentioned on page 187 should be described in greater detail in the final supplement. Often these emissions can contribute significant levels of particulates to the air.

o In Table 4-9 on page 189, the words "Oxidant (ozone)" should be replaced with "Ozone". The hydrocarbon standard was revoked by EPA in 48 FR 628, Jan. 5, 1983, and should be deleted from the table. The # footnote should be deleted.

o Prevention of significant deterioration (PSD) is discussed at the bottom of page 189. It would be helpful if this section were cross-referenced to the discussion of proposed PSD regulations found on page 45.

o On page 45, it appears the word "not" was omitted from the first sentence of the fourth paragraph. The sentence might better read, "To obtain a permit for a facility in a nondegradation area, a special pre-construction review must show that the facility will not pollute the air in excess of NAAQS or PSD standards more than once per year in any air quality control region."

On page 279 in the Air Resources Section, reference is made to "21,000 more tons per year in the Fort Union Region." In accordance with Table 5-1 on page 275, we believe that this should be replaced with "70,000 more tons per year in the Powder River Region."

Water Quality

Minimization of impacts on water resources is highly dependent on strict enforcement of effluent limitations (through permits) and state water quality standards by permitting authorities. The statement on page 46 that the "Clean Water Act permit system applies only during active mining" is not correct.

While EPA's specific effluent guidelines for coal mining are applicable until release of the bond under the Surface Mining Control and Reclamation Act (SMCRA), any subsequent discharge that may occur would also require a permit. Effluent levels for post-mining permits are established on a case-by-case basis, rather than through standardized guidelines.

CONSULTATION AND COORDINATION

46-18 several years old, and should be updated. Additionally, several contradictory statements appear in the text on Page 349. For example, the appendix states that specific long-term results of reclamation cannot be predicted with certainty, but then reports that land productivity can eventually be returned to nearly original levels for soil of a given character.

46-19 Finally, the summary states that a strong compliance program with an effective monitoring and maintenance program is needed to ensure that reclamation measures are applied in a timely and effective manner. We suggest that a discussion of the status of any planned or existing compliance program be included.

Unsuitability Criteria

The following specific comments are arranged according to the issue being addressed.

Issue No. 13 (Air Quality)

EPA generally agrees with the analysis provided of this issue. However, to provide added protection for PSD Class I air quality areas, we offer for your consideration the possibility of incorporating the following EPA policy (or similar one) as part of the Federal land manager's responsibility to manage for Prevention of Significant Deterioration (PSD) in Class I air quality areas.

46-21 Section 165(d) of the Clean Air Act requires that the Federal land manager and the Federal official charged with direct responsibility for management of any lands within a Class I area that may be affected by emissions from a proposed major facility shall be notified of the facility's permit application. It is EPA policy to provide that notice for any major facility which will be located within 60 miles (100 km) of a Class I area. With respect to coal mining, "major facility" means a facility with after-control emissions greater than or equal to 250 tons per year of any air pollutant regulated under the Clean Air Act. If the PSD Class I area Federal land managers are consulted at the coal program planning stage, the intent of Section 165(d) will be satisfied.

Issue No. 20 (Municipal Watersheds)

46-22 We agree that additional guidance is needed on this issue, especially in terms of how to define ground-water basins which supply specific wells. Some States have already mapped these areas. EPA's Office of Ground-Water Protection is currently developing guidelines for classifying ground water for EPA actions. These guidelines will be available for public comment this November, and will likely address watershed-type issues. The guidelines should prove useful for evaluation at both the coal leasing and mine permitting stages.

Issue No. 23 (Riparian Habitat)

46-23 The analysis of this issue acknowledges the importance and uniqueness of vegetative riparian habitat, especially in western coal states. Often this habitat is a narrow band of vegetation on both or only one bank of the water source. Little or no vegetation is likely to exist as productive wildlife habitat beyond the riparian habitat. We believe that inclusion of more definitive protection for riparian areas in Criterion 16 (or in the Criteria 14, 15 and 16) would promote the protection of this vital resource in western coal states.

Issue No. 24 - (Wetlands)

46-24 Wetlands in western coal states are a unique and important resource. An individual wetland area can serve as a crucial habitat for fish and wildlife, a significant ground water recharge source, provide flood protection and serve important water quality functions.

The formal inclusion of particular language associated with wetlands as an unsuitability criterion under 43 CFR 3461.1 would further refine existing Department of the Interior policy and provide for protection of wetlands at the land-use planning level. We therefore support adoption of a new unsuitability criterion specific to wetlands.

Issue No. 25 - (Sole-Source)

46-25 The potential for loss of important ground waters and sole-source water supplies makes it imperative that sole-source water supplies be identified and protected during the land-use planning stage of activity planning. Identification and protective measures should be included under Criterion 17.

In the discussion, we suggest that the term "sole-source" be used only when discussing specific aquifers included in the Sole Source Aquifer Program under the Safe Drinking Water Act. Your discussion of aquifers includes the protection of critical water supplies for wildlife and live stock use, as well as for domestic use. We would characterize such aquifers as Class I - Special Ground Waters under Ground Water Protection Strategy. While EPA's Class I ground waters focus more directly on "substantial population and ecologically vital" areas, EPA feels that its guidelines for classes of waters will be useful to BLM in assessing and describing impacts. We would be pleased to provide assistance on this matter.

Issue No. 28 - (Alluvial Valley Floors (AVF))

Until a more exact procedure (such as classification) for identifying important ground-water settings including the alluvial valleys is available, the criterion should be retained so that the most important AVFs are eliminated early in the decision process. We support the conclusion that additional data (or reinterpretation of existing data) are needed to examine valleys with good potential for future irrigation, as well as to judge their "significance".

COMMENTS AND RESPONSES

Issue No. 53 (Terminology)

We concur with BLM's proposal for confining use of the terms "critical" and "critical habitat" to the context of threatened and endangered wildlife only. Other terms such as "crucial," "high priority" and "essential" can be better applied as discussed in the analysis provided for this issue.

RESPONSES TO COMMENT LETTER 46

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| 46-1a | The description of the proposed program (including revisions) has been expanded. |
| 46-1b | The final supplemental EIS emphasizes the linkage of coal leasing-related activities to land use planning and environmental analysis of alternative proposals for regional sales. (See Chapters 1 and 2 sections on National Environmental Policy Act (NEPA) documents incorporated by reference and environmental analysis as part of the Proposed Action and alternatives.) The tiering relationship of this supplemental EIS to later NEPA documents is also stressed in Chapters 1 and 2. |
| 46-2 | The text has been revised to include an explanation of this relationship. Also see response to Category 1, Adequacy of the Supplemental EIS, in the Categorical Analysis of Comments section of this chapter. |
| 46-3 | If the Secretary of the Interior chooses the Proposed Action or any variation of it that continues to require regional EISs, the existing regional EISs or draft EISs will be reviewed by their respective regional coal teams to determine what changes will be needed to bring them into compliance with the National Environmental Policy Act and new program standards. Some of the documents will probably need supplements, whereas others will be reissued. |
| 46-4 | The discussion of Title II of the Federal Land Policy and Management Act (FLPMA) is a synopsis of some of the major changes affecting the federal coal management program. That Title II also requires compliance with applicable state and federal laws is not a change but a reaffirmation of requirements existing when FLPMA was passed. |
| 46-5 | The text has been revised as suggested. |
| 46-6-46-7 | BLM is developing a handbook that will directly address air quality analyses. In addition, BLM's Air Quality Handbook for Surface Mines (Mortison-Knudson Co. Inc 1983) has a good discussion of these analyses along with control measures to mitigate surface mining emissions. |
| 46-8 | This type of detail is not appropriate for a programmatic EIS but is better suited for later site-specific analyses. For a discussion of the scope of analysis for this supplemental EIS, see the response to comment 27-38. |
| 46-9 | Table A-9 has been corrected as suggested. |
| 46-10 | A cross-reference has been added. |
| 46-11-46-14 | The text and table have been revised in response to these comments to reflect more recent estimates. |

CONSULTATION AND COORDINATION

- 46-15 A discussion of the injection of wastes into abandoned underground mine workings is beyond the scope of this programmatic supplemental EIS, which concerns itself mainly with the existence and structure of a program to manage federally owned coal resources.
- 46-16- The amount (duration) of noise produced would increase as coal
46-17 production increases, but at the programmatic level of analysis, site-specific impacts cannot be pinpointed. The mitigation measures suggested are appropriate for a more site-specific analysis, lease stipulations, and permit requirements.
- 46-18 The USGS-BLM-OSM-FS reclamation study (Narten and others 1983) evaluates the effectiveness of ongoing reclamation projects at specific western coal mines. Information from this study is included in this supplemental EIS (see Appendix 5).
- The reclamation analysis presented in the supplemental EIS is based on studies, research, and experiences of authorities, including state-of-the-art procedures. Continuing research designed to meet specific needs has supplemented the current literature in the final supplemental EIS.
- 46-19 This statement has been clarified in the final supplemental EIS.
- 46-20 The Office of Surface Mining Reclamation and Enforcement (OSM) has analyzed and discussed the assumption of full compliance with the Surface Mining Control and Reclamation Act (SMCRA). These Analyses occur in the following documents: Environmental Assessment; Cumulative Impacts of Adopting OSM's Proposed Revisions to the Permanent Program Regulations (May 3, 1982); OSM EIS-1 Supplement: Proposed Revisions to the Permanent Program Regulations; Implementation Section 501(b) of the Surface Mining Control and Reclamation Act of 1977, draft (June 1982); and OSM EIS-1 Supplement, final (January 1983)(OSM 1983).
- These analyses concluded that all states would make a good faith effort to enforce their regulations in accordance with SMCRA and that whenever any deficiencies occur in that enforcement, OSM, through its oversight role, would assure proper compliance with SMCRA. It follows that, if the state is enforcing SMCRA, all operators will be in compliance with SMCRA. If an operator is not in compliance with SMCRA or the implementing regulations, a notice of violation or cessation order is issued. Any impacts to the environment that occur are short term and localized. These assumptions were considered reasonable, being based upon many program controls, such as levels of funding, inspectors, and procedures for compliance.
- 46-21- See responses to these comments in the Responses to Other
46-25 Unavailability Review Comments section at the end of Appendix 1.

COMMENTS AND RESPONSES

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State of Montana
Office of the Governor
Helena, Montana 59620

FED SCHWINDEN
MAY 21, 1985

Mr. Bill Fry
Bureau of Land Management
Montana State Office
P.O. Box 38800
Billings Montana 59107

RE: Letter to Secretary Hodel
Dated May 15, 1985

Dear Mr. Fry:

Per the request of Doug Blankenship of your Washington office, enclosed is a corrected copy of the above referenced letter.

Thank you for bringing this matter to our attention.

Sincerely,

V. Bedard
V. Bedard
Secretary

State of Montana
Office of the Governor
Helena, Montana 59620

FED SCHWINDEN
MAY 15, 1985

Honorable Donald Paul Hodel
Secretary, Department of the Interior
18th and C Streets NW
Washington DC

Dear Mr. Secretary:

This letter provides comment on the Draft Environmental Impact Statement supplement on the Federal Coal Management Program (February, 1985). It also provides comments on the following related documents: A Review of the Unsuitability Criteria in Federal Coal Leasing (March, 1985), Draft BLM Supplemental Program Guidance to the Bureau Planning System (February 1985), and Production Forecast Technical Report, (March, 1985).

Montana believes that a workable and predictable federal coal leasing program is vital to the energy security of the nation and essential to the economic development needs of this state. It is prudent to restore a workable leasing program in order that the need for new leasing can be assessed in each region and to establish improved procedures for evaluating the acceptability of coal lands for leasing. I offer the following observations and recommendations to help guide the Department's efforts toward this end.

Production Forecasts

The production forecasts contained in Chapter 3 of the Coal Program Environmental Impact Statement (EIS) provide one tool for the Regional Coal Teams (RCT) to use in determining if additional coal leasing is warranted in a region. These forecasts, however, should be considered as only one of many tools for determining future coal demand. Furthermore, meeting the aggregate demand for future production is but one of several goals for the federal coal leasing program. Indeed, there may be a need to lease even when the aggregate numbers do not so indicate. For example, in some instances, there may be value in leasing to prevent existing leases with environmental or socioeconomic problems from coming into production. Additionally, the coal market has many unique niches which may not be reflected in aggregate demand forecasts. To provide coal for such unique opportunities requires a careful, region-by-region, market assessment of the need.

There is also a need to continually reevaluate the demand for coal on both a regional as well as a national basis. While the forecasts in Chapter 3 may present an accurate picture of the coal market today, they are subject to the same frailties which have

CONSULTATION AND COORDINATION

Honorable Donald Paul Model
Secretary, Department of the Interior
May 15, 1985
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plagued previous forecasts. The recent track record of forecasting coal demand by both government and the private sector has been notably inaccurate.

Runs of the National Coal Model

47-1b The BLM should affirm in writing a policy that requires the BLM to make runs of the national coal model (and other analytic tools) using alternative assumptions provided by RCT's. This has been a repeated recommendation by the Federal-State Coal Advisory Board for the past several years.

Data Adequacy Standards

In response to recommendations by the Office of Technology Assessment, Secretary Clark directed the establishment of data adequacy standards for the coal leasing program. The western states have supported this concept as a means of not only improving data upon which decisions are based, but also as a means of improving public confidence in the program and avoiding future leasing moratoriums.

National standards, as indicated in the Department's A Review of Unsuitability Criteria in Federal Coal Leasing, must by necessity either be so general as to be of little use in the field or so detailed as to burden the program with requirements not germane in all coal leasing regions. To help alleviate this problem, Montana recommends that data adequacy standards should be set by each RCT for its specific region. We further recommend that data adequacy standards be adopted through the following process:

1. The BLM should provide each regional coal team with a listing of potential subjects for data adequacy standards.
2. Regional coal teams should review the list of potential subjects and develop a list of areas of possible standards which corresponds to the critical environmental, socioeconomic and coal resource issues in the region.
3. Regional coal teams should propose draft data standards in each region and solicit public comment. Following a review of

Honorable Donald Paul Model
Secretary, Department of the Interior
May 15, 1985
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47-2 comments, the team should publish the data standards for the coal region.

Acceptance of RCT Leasing Recommendations

Paragraph 4 of the Powder River RCT Charter states:

47-3 "RCT's recommendations to the BLM Director shall be accepted except in the case of an overriding natural interest or in the case that the advice of the Governor(s) is accepted pursuant to 43 CFR 3420.4-39(c). In cases where the RCT's advice is not accepted, a written explanation will be provided to the RCT and the public."

I believe this language is so important that it also should be included in the BLM's coal leasing regulations.

Unsuitability Criteria

47-3a The BLM's review of the coal program unsuitability criteria reflects many of the changes suggested by the Office of Technology Assessment as well as those made by Montana state agencies in meetings with BLM staff. A continuing criticism of the process is that lands should not be carried forward as acceptable in the leasing process when the available data on such lands is not adequate to apply the unsuitability criteria. Instead such lands should be declared "unsuitable pending further study."

Montana also believes that the 20 existing unsuitability criteria should be retained at least through the next round of coal leasing. We concur with the report recommendation that no additional unsuitability criteria be added at this time. We also concur that data requirements for split and non split estate lands should be the same.

Attached to this letter are additional comments provided by the Montana Department of Fish, Wildlife and Parks on the criteria for resident species of high state interest (unsuitability criteria #15).

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Secretary, Department of the Interior
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Fair Market Value

The Department should abandon its procedure of accepting as legitimate bids, bids which are as low as 25 percent of the pre-sale estimate. These bids are currently averaged with the pre-sale estimate and become the acceptance price for the leases. 474 Using bids as low as 25 percent of the government's estimate of value, erodes public confidence, a vital component of a workable coal program. The Department should increase the 25 percent level to 75 or 90 percent to assure the public that coal is being leased for its fair market value.

The Department should re-examine its proposal to eliminate the \$100 per acre minimum bid, since it has not specified a substitute level. The Department should also re-examine the proposal to keep bids secret. The system of sealed bids followed by oral bidding, which was in effect prior to the 1982 lease sale in the Powder River Basin, worked well and did not undermine public confidence. 475

Lease by Application

The BLM state directors have suggested that some of the present federal coal regions, within which coal can only be leased through the competitive leasing process specified in 43 CFR 3400, could be modified or shifted to a lease-by-application process. This may have merit in regions such as Fort Union where industry demand is currently relatively low. In such cases the option to continue the RCT under a lease-by-application process should be specifically provided in the regulations. Furthermore, the duties and responsibilities of such RCT's should be identified in the regulations. We also believe that the rules should specify that the decision to move to a lease-by-application process or to modify the boundaries of a coal leasing region must be initiated by the regional coal team. 476

Inactive Coal Teams

Montana is concerned that neither the coal leasing regulations nor the RCT charters contain language regarding the duties of RCT's for regions where leasing is inactive. We recommend, therefore, that a section be added to the leasing regulations that 477

Honorable Donald Paul Hodel
Secretary, Department of the Interior
May 15, 1985
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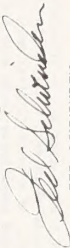
describe the duties for an inactive RCT. These rules should be formatted in a manner similar to "Duties of the Team" section in existing charters and should describe the circumstances whereby a team will be declared inactive and whose responsibility it is to make such a determination. The section should describe what would trigger an inactive team to meet. Montana feels that at a minimum, inactive RCT's should meet once per year. Inactive RCT's must be given adequate opportunity to review proposed coal leases and to subsequently make recommendations to the BLM. It is suggested that meetings of the Inactive Teams be held in the appropriate coal leasing region. Federal-State Coal Advisory Board meetings should not be a substitute for these local meetings. 478

Implementation Guidelines

The Department should retain the current policy of denying lease assignments to parties which would not otherwise qualify for new competitive leases. Changing the policy could result in large scale lease assignments merely for the purpose of escaping the prohibitions of Section 2(a) (2) (A) of the Mineral Leasing Act.

Thank you for the opportunity to comment.

Sincerely,



TED SCHWINDEN
Governor

cc: Jack D. Edwards
Michael O. Gibling

CONSULTATION AND COORDINATION

COMMENTS PROVIDED BY THE MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS ON UNSUITABILITY CRITERIA #15 (Resident Species of High State Interest)

1. Clear and concise delineation for resident species of high state interest should be incorporated into the unsuitability guidance document. These delineations will, of course, vary from state to state and between coal regions. The DFWP is ready to assist the BLM in providing these delineations for Montana's species of high state interest.
2. Wildlife inventories on potential lease tracts must occur as early as possible in the land use planning process. The timing of these inventories for specific species should be coordinated with the State and Federal Wildlife agencies.
3. The BLM should establish standards for the length of time to conduct adequate pre-leasing Wildlife inventories.
4. We concur with the BLM's recommendation to change the words "most critical" to "crucial" with regard to species of high state interest. We believe that this would better satisfy the intent of criteria 15 and would help eliminate a lot of confusion.
5. We also concur with the BLM's recommendation that the coverage of sensitive plans can be made either under criteria 20 or during application of the multiple resource trade-off screen. Information on such plant species should be solicited from each BLM state office as well as from State and Federal Wildlife agencies. The BLM should be aware that a Montana Natural Heritage Program was recently funded by the State Legislature. As this program develops in the coming years, it should assist the BLM in identifying potential coal lease areas having threatened or endangered plant and animal species.

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RESPONSES TO COMMENT LETTER 47

- 47-1a These are valid considerations, which are addressed in the Purpose and Need section of Chapter 2.
- 47-1b BLM will regularly provide runs of the National Coal Model to the regional coal team voting members. Requests for runs under alternative assumptions will be coordinated through the regional project manager, and new runs using those assumptions will be provided.
- 47-2 See response to Category 4, Data Adequacy, in the Categorical Analysis of Comments section of this chapter.
- 47-3 A proposed regulation, published for comment on March 15, 1985 (see 50 Federal Register 10508), would insert language equivalent to the RCT charter language in 43 CFR 3400.4.
- 47-3a See response to this comment in the Responses to Other Unsuitability Review Comments section at the end of Appendix 1.
- 47-4 The Department of the Interior has no procedure for accepting a bid and awarding a lease where such bid is as low as 25 percent of the presale appraisal. If a tract receives more than one qualifying bid in a sealed-bid competitive lease sale and no bid equals or exceeds the presale appraisal, the Department would award a lease to the high bidder if and only if the high bid exceeds the average of all qualifying bids and the presale appraisal. A bid is considered a qualifying bid if, among other factors, it both exceeds the minimum (currently \$100 per acre) and exceeds 25 percent of the presale appraisal. Bids not meeting these conditions are considered spurious and do not even qualify for consideration. The "25 percent" rule is now undergoing re-analysis, and any decision to change it will be reviewed by the Secretary of the Interior.
- The Department's policy is to reveal bids at the time of the sale and before completion of all post-sale evaluations. A suggestion has been made, however, that knowledge of the bids for tracts that will undergo post-sale evaluation may bias the evaluators. Therefore, the regulation on announcement of bids was tentatively changed to allow for keeping secret the bids on tracts that will undergo post-sale evaluation. This proposal will be reviewed by the Secretary in his post-EIS decision on the form and details of the federal coal management program.
- 47-5 The current proposal is to maintain by policy a \$100/acre minimum bid or equivalent. BLM is assessing the following: (1) whether this minimum amount should be expressed in dollars per acre or cents per ton of reserves, (2) whether the minimum should differ for different coal regions, (3) how often this minimum should be reviewed for change, and (4) how this minimum should be determined.

COMMENTS AND RESPONSES

The final decision to eliminate the \$100/acre minimum bid provision will only be made if it is replaced by an alternative superior provision. This provision remains under review. See Appendix 6, Issue Analysis (proposed rule changes).

47-6 See response to Category 7, Leasing by Application, in the Categorical Analysis of Comments section of this chapter.

47-7 The Department of the Interior does not believe that separate regulations are needed to describe the duties of an inactive regional coal team (RCT). If an RCT is needed in a certified or decertified region, the RCT's functions and responsibilities can be described in the RCT charter. Each RCT is preparing new charters based on the assumption that the coal regions involved will continue to exist. Should this situation later change, each RCT can change its charter in the manner suggested.

47-8 See response to this comment in the Responses to Other Unsuitability Review Comments section at the end of Appendix 1.

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STATE OF WYOMING
OFFICE OF THE GOVERNOR
CHEYENNE 82002

May 1, 1985

The Honorable Donald Paul Hodel
Secretary of the Interior
Office of the Secretary
Department of the Interior
Washington, D. C. 20240

Dear Secretary Hodel:

After a two year impasse in the federal coal management program, it is good news to see that the Department of the Interior is getting ready to put the federal coal program back on the track. There are several points which I would like to bring to your attention regarding the overall management and implementation of the coal program. First, the Department must reestablish public confidence in its ability to properly manage the public's resources. Second, the program must be predictable and stable so that all parties involved will have an opportunity to participate in the process and that our nation's energy needs can be met in an environmentally and politically acceptable manner. Further, it appears that the proposed action outlined in the Draft Environmental Impact Statement Supplement to the Federal Coal Management Program can satisfy the two points I have mentioned above.

As you well know, the State of Wyoming has been a strong advocate of the federal coal management program. The program as currently envisioned provides for a strong federal/state partnership in the discussions and decisions leading to the leasing of federal coal resources. While the Draft Supplement is silent on the issue, the proposed amendments to 43 CFR 3400.4, which appeared in the March 15, 1985, Federal Register, continues and strengthens the federal/state partnership originally embodied in the 1979 Federal Coal Management Program EIS. With the adoption of that amendment, a strong state role is insured and a continued state advocacy of the program is also insured.

Throughout the history of the federal coal leasing program considerable debate has centered on the proper amount of

The Honorable Donald Paul Hodel - May 1, 1985 - Page 2

federal coal to offer up for leasing. There has never been a consensus on the right level of leasing, and I doubt if there ever will be. Nevertheless, the production forecast discussion contained in Chapter 3 of the Draft Supplement highlights the need to have several production forecast models available to the states, the public and the federal government when discussions and decisions are being made about leasing coal. Further, the discussion in Chapter 3 also points out that while in the aggregate there may not be a need to lease federal coal, there will be many instances where on a region-specific basis it makes sense to lease coal. There will always be instances where the coal markets require particular types of federal coal and that coal must be made available to prevent undue economic hardship to the consumer. Additionally, there will be instances where coal should be leased to prevent a by-pass of the resource. Therefore, leasing of coal despite what the national model says must be provided to take into account these unique circumstances. Further, there is also a need to periodically reevaluate the demand for coal on a national basis, as well as at the regional level. Considering the volatile nature of the energy picture, periodic reevaluation is essential.

DATA STANDARDS

The Bureau of Land Management has been criticized for not having in place data standards necessary to determine whether or not their decisions are based on an adequate data base. In testimony before the Commission on Fair Market Value Policy for Federal Coal Leasing, I indicated that at a minimum, the federal government should have a better coal data base when it makes a decision to lease coal. My concern was and is, that it appears that the Department is reducing its coal drilling program. Since the coal program is data intensive, the absence of drilling data could result in shot-in-the-dark leasing. A solid data base is necessary in order to make sound leasing decisions and for insuring fair market value for the federal coal. Therefore, I would strongly urge that the Department resist efforts to reduce or eliminate the coal drilling program.

The Office of Technology Assessment expanded my concern over coal data to include a much wider range of data standard issues. Philosophically, I can agree with the concept of having as much data as possible in hand when making a decision. However, I don't believe that the coal program should get bogged down in an over zealous data collection program. In any event, standards should be established which will improve public confidence in the program. To that end:

- a. The Bureau of Land Management should provide each regional coal team with a list of potential areas of concern which may require data standards;
- b. Each regional coal team should review this list and

COMMENTS AND RESPONSES

The Honorable Donald Paul Hodel - May 1, 1985 - Page 3

delete or add to that list as appropriate and develop their own draft standards to meet the critical environmental, socio-economic, and coal resource issues in the region; and

c. The draft standards should be made available for public comment and review. After the public has had an opportunity to review the draft standards, the regional coal team should consider the comments and then adopt and publish the data standards for the region.

Concurrent with the need to have defensible data base, the Department and the Bureau of Land Management need to carefully review the roles of the Science Advisors and the Coal Data Review Council to insure that duplicative advisors and functions are not being created.

FAIR MARKET VALUE

The key to regaining public confidence in the coal leasing program hinges on the perception that the federal government will be receiving fair market value for the coal. I do not believe that the procedure of accepting as legitimate bids, which are as low as 25 percent of presale value estimate, will restore the public's confidence in the program. The Department should reconsider this procedure and consider increasing the acceptable bid to a higher figure, such as 75 percent of the presale value.

On a directly related note, the Department should reexamine its proposal to eliminate the \$100 per acre minimum, since it has not developed a substitute approach. The Department should also strongly reconsider the coal bidding process. The system of receiving sealed bids followed by an oral bidding process worked well in the past and did not undermine public confidence in the program.

For coal regions which do not have a high level of interest, the Department, in consultation with the respective coal state governors, should consider a modified leasing approach, such as leasing-by-application. The duties and responsibilities of the respective regional coal team would have to be specifically outlined by regulation. Further, opportunity for public input and secretarial/gubernatorial consultation would have to be provided for as if it were a coal region with a high degree of public interest.

In keeping with the concept of providing public input to the program, it would seem appropriate to build into the Federal/State Coal Advisory Board some form of program review. This could be accomplished in one of two ways:

a. Have the Federal/State Coal Advisory Board establish a

The Honorable Donald Paul Hodel - May 1, 1985 - Page 4

task force comprised of several BLM representatives, several state representatives, representatives from the industry, and the public interest groups. Their charge would be to review the program to identify problem areas and redundant aspects of the program. In essence, provide a review of the program after it has been operating for a while; or

b. Have each regional coal team establish a task force with the same membership and duties as outlined in a. above.

I don't believe it would be necessary to establish the program review task force until approximately 18 months after the program has been running. That would give all parties involved ample opportunity to evaluate the effectiveness of the program and to identify areas where it could be improved. In either case, the task force would provide their recommendations to and through the respective regional coal teams to the Federal/State Coal Advisory Board for consideration and appropriate action.

The tables listed in Appendix 4, page 324 and page 328 need to be corrected. Wyoming levies a severance tax of 10.5% on surface mined coal and a severance tax of 7.25% on underground mined coal. Not only are the numbers quoted in the Draft Supplement inaccurate, they do a great disservice to the State of Wyoming by overstating our severance tax rate.

In closing, I believe that the Proposed Action outlined in the Draft Supplement will restore the public's confidence in the federal coal management program while at the same time insuring that sufficient reserves of federal coal will be made available to meet this nation's energy needs. I am also enclosing for your information and consideration, the comments I have received from other state agencies that provided me comments on the Draft Supplement.

Yours sincerely,
Robert Burford

SH/wmt

Enclosure

cc: Robert Burford

CONSULTATION AND COORDINATION



THE STATE
OF WYOMING
ED HERSCHLER
GOVERNOR

WYOMING RECREATION COMMISSION

122 WEST 25TH - HERSHEY BLDG. CHEYENNE WYOMING 82002

February 21, 1985

ALVIN F. BASTRON, P.E.
DIRECTOR
177 7895

Jack D. Edwards, Project Leader
Bureau of Land Management
Division of EIS Services
555 Zang Street, First Floor East
Denver, Colorado 80228

RE: SFederal Coal Management Project: Draft EIS Supplement [Wyoming State
Clearinghouse No. 78-138 (1985)]

Dear Mr. Edwards:

The authors of this document note: "This supplemental EIS is scoped to assess broad and general program-level impacts" (p.3). They also point out: "The size and number of impacts would vary by the amount of surface disturbance and population increase, but these impacts cannot be determined until inventories are conducted" (p.281). Given that "coal development would affect cultural resources by destroying or altering the resources and the surrounding environment" (p.235) the Wyoming State Historic Preservation Officer urges the BLM to identify all archeological and historic resources which may be present within the proposed leases. To accomplish this, we recommend 100% pedestrian surveys of all mine permit areas as soon as possible once applications have been filed. Each archeological and historic site discovered should be evaluated and those which satisfy the National Register criteria of significance should be adequately mitigated prior to any ground disturbance.

We agree with Mr. Dan Martin's statements that data recovery programs designed to retrieve significant archeological or historic information are inherently tied to current methodologies and research objectives and, hence, result in the loss of data not considered or recognized at the time of excavation (discussion p.235). Nevertheless, data recovery is preferable to no action whatsoever since we cannot assume that sites designated for avoidance will actually be avoided either over the life of the mine or during reclamation operations. We also take exception with Mr. Martin's figures on the number of cultural resource sites currently known within the Powder River Coal Region. His estimate of "over 250 sites" (p.235) grossly understates the known resource base as indicated by our data. Of the 9,007 sites presently identified, 1,049 (11.65%) satisfy the criteria for eligibility to the National Register and must be considered in project planning. The Register status of an additional 4,500 sites (49.96%) remains uncertain or unknown. Thus, the evaluation of these existing sites must also occur together with the evaluation of new sites discovered through field inventories of unsurveyed lands within the permit areas. We provide the same data and make the same recommendations regarding the Green River-Hams Fork Coal Region.

ALBERT PUGH, DAN RADDA, VICE PRESIDENT, TREASURER, 902 E. 5th, Cheyenne, WY 82001, Phone 232-1110, Fax 232-1110
JAMES A. WILLOX, 1441 E. 14th Street, Cheyenne, WY 82001, Phone 232-1110, Fax 232-1110

Jack D. Edwards
Mark Jung
February 21, 1985
Page 2

If you have any questions please contact Mr. Thomas E. Marceau at 777-6696.

Sincerely,

Mark Jung

Mark Jung
Deputy SHPO

FOR:
Alvin F. Bastron, Director and
State Historic Preservation Officer
MJB:klm

COMMENTS AND RESPONSES



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Game and Fish Department

CHEYENNE, WYOMING 82002
April 5, 1985

EIS 185/L2
USDI/BLM-Federal Coal
Management Program-Draft
EIS Supplemental.

W DONALD DEXTER
DIRECTOR

Mr. Dick Hartman
State Planning Coordinator
Herschler Bldg.
Cheyenne, WY 82002

Attention: Mr. Warren White

Dear Mr. Hartman:

In response to the notification from your office, we have reviewed this Supplemental DEIS and offer the following comments to be forwarded to the appropriate Federal Agencies.

The purpose of the subject DEIS is to evaluate environmental consequences of continuing the current federal coal management program, at a modified level, or implementing in its place any of three alternative programs. The proposed action, continuing the current program, would allow leasing of new coal tracts on a competitive bid basis. The three alternatives include leasing by application, preference right and emergency leasing, and no new federal leasing.

We have some broad criticisms of the DEIS. First, projected changes of impact levels resulting from the proposed action and alternatives are generally expressed as percentages of impact levels evaluated in the 1979 Program EIS. We feel that many impact categories - especially socioeconomic and secondary impacts - were not adequately quantified in that document. Therefore, current impact projections do not afford an adequate baseline for planning purposes.

Secondly, discussion of impact quantification in the DEIS is repeatedly dismissed on the basis that such quantification is a function of local and regional EIS's, and not appropriate at the program level. We agree, but only to a point. Wildlife impacts have seldom been adequately addressed in local or regional EIS, and we doubt this situation will change in future EIS's. We believe it would be appropriate for this DEIS to provide some direction for analysis of wildlife impacts, because most of the factors potentially affecting wildlife are addressed within the comprehensive scope of the program level. Indeed, it is the program definition and selection that will dictate the future level of wildlife impacts.

DISTRIBUTION OF KNOWN SITES BY NATIONAL REGISTER STATUS (Processing Date: February 19, 1985)

Powder River Coal Region: Wyoming Only

	TOTAL	% TOTAL
Register Listed	40	0.44
Keeper Determined Eligible	105	1.17
Considered Eligible	904	10.04
Not Eligible	3321	36.87
Eligibility Uncertain	1434	15.92
Eligibility Unknown	3066	34.04
No Information	137	1.52
Total	9007	

Green River-Hams Fork Coal Region: Wyoming Only

	TOTAL	% TOTAL
Register Listed	53	0.35
Keeper Determined Eligible	17	0.11
Considered Eligible	2836	18.80
Not Eligible	5249	34.79
Eligibility Uncertain	2010	13.32
Eligibility Unknown	4921	32.82
No Information	81	0.54
Total	15086	

CONSULTATION AND COORDINATION

Mr. Dick Hartman
April 5, 1985
Page 3 - EIS 185/L2.

Specific comments are presented below:

1. Page 6 - We feel the analyses presented under the heading "WILDLIFE" and "RECREATION RESOURCES AND WILDERNESS" are inadequate. It is stated that the distribution of human population changes for both the 1979 and 1985 leasing analyses are unknown. The extent of indirect impacts caused by coal-related population growth was not quantified in 1979, and any application of a scalar to the hypothetical 1979 impact will yield an equally hypothetical 1985 impact. The assumption of a linear relationship between the amount of surface disturbance and the degree of wildlife impact is probably invalid. To be valid, this assumption would require that all habitat components and mines must be randomly distributed with respect to each other - an improbable situation. The assumption of linear relationships between human population growth and the degree of either wildlife impact or recreation impact is similarly invalid. We feel any meaningful analysis of secondary impacts must begin with a relatively detailed and accurate projection of mine locations and human population distributions, and should be in a regional EIS.
2. Page 12 - The 2nd, 3rd, and 5th objectives of the current federal coal leasing program contain some mutually exclusive elements. The approach to promotion of economically efficient multiple resource use and development is stated on page 60. This approach includes assurance that enough lease tracts (net leases) are available to promote "healthy" competition in the coal market. Unfortunately, as more leases become available, the future distribution of coal development and population growth patterns becomes less predictable. This will diminish our ability to formulate "environmentally sound patterns of multiple resource use." Environmental protection is thus reduced from a planning process to a reactionary process. When regulatory authorities must "react" to unforeseen development scenarios, the entire planning process is protracted, and opportunity to formulate effective mitigation programs is severely diminished. The planning process is approached on a piecemeal basis, and the opportunity to develop a comprehensive, strategic plan is lost.
3. Page 61 - We feel the Department of Interior's contention that it is in the national interest to lease enough new coal tracts to allow several potential suppliers to bid on new utilities contracts to be inapplicable to the situation in Wyoming. Most Wyoming mines are currently producing at only a fraction of capacity. It is our understanding that utilities companies are cancelling supplier contracts because oversupply has made it more profitable to pay cancellation penalties and renegotiate new contracts than to continue old contracts. Several mines are closing due to the market slump. Other proposed mines remain undeveloped due to inability to negotiate profitable contracts. There is currently enough potential suppliers (40 mines in Wyoming) to provide what this agency

Mr. Dick Hartman
April 5, 1985
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- 48-12 feels to be more than adequate competition in the market place. Before accepting the premise of free competition as a justification for new federal leasing, we suggest the DEIS should document such a need, based on current production levels, current and future production capacity, and the number of existing operations below production capacity versus the number at production capacity. We make this suggestion because new mines will impact wildlife.
4. Page 22 - The proposal to include three science advisors as ex officio members of the RCT is a good idea. We recommend that one of these advisors be a wildlife management professional.
- 48-13 Page 128 - The statement "Attitudes in Wyoming, where recent coal mining has occurred, are highly favorable toward development" is made without supporting documentation.
- 48-14 Page 133 - The DEIS fails to recognize the significance of national impacts caused by western coal development. Our undeveloped western states, their natural resources, cultures, and lifestyles, hold very real national value. Much of the industrialized and urbanized nation has historically derived benefit from the existence and availability of vast remote, unpopulated areas, which offer unique recreational, aesthetic, and educational opportunities. This should be discussed as one of the irreplaceable resource commitments associated with western coal development.
7. Page 134 - What we consider to be a fundamental flaw in coal management appears on page 124 where it is stated "this analysis cannot be used by local officials to plan mitigation strategy...Future regional and site specific EIS's will address environmental impacts at the community level." Similarly, on page 216 it is stated "Because the specific coal tracts that might be leased are not known, the exact habitats that would be affected cannot be determined...Wildlife impacts cannot be measured at the program level because the locations of tracts on big game winter ranges, breeding areas, and migration routes are not known." As previously noted, we believe that regional and local EIS are probably the correct procedure for such analyses. Still, the program level should provide some direction for wildlife impact assessment and mitigation. Past leasing and permitting EIS's have not dealt adequately with population related impacts at the local or regional level. In fact, even simple analyses of habitat impacts have been inadequate in some cases due to reliance upon literature sources rather than data collection on specific tracts. Future EIS's are unlikely to be any more effective in their treatment of primary and secondary impacts than have previous EIS's. Hence, their reference by the program level DEIS implies that the problem has been solved when in fact past performance has shown us

COMMENTS AND RESPONSES

Mr. Dick Hartman
April 5, 1985
Page 4 - EIS 185/L2.

48-16 EIS's. State wildlife agencies must be provided with comprehensive evaluations of primary and secondary wildlife impacts to afford a basis for formulating strategic resource management plans.

8. Page 217 - The analysis of secondary wildlife impacts should include an important point made on page 134: "Because many western communities lie in river valleys, particularly in western coal regions, urbanization all too often causes conversion of higher quality cropland to urban uses." The same principle applies to higher quality wildlife habitats. It is human nature to settle in the most aesthetically and climatologically attractive environments, which all too often constitute the most valuable habitat areas. Since these settlement areas tend to contain limiting habitat components such as critical winter range or riparian habitat, the total effect may extend over several times the surface area of settlement, in terms of year around habitat rendered unusable by wildlife.

48-17 The statement made here underemphasizes the significance of secondary wildlife impacts: "Wildlife habitats removed from the immediate mining area could be temporarily or permanently disturbed by noise, and water emissions from community expansion, increased human activities, and plant and mine operations." In fact, this form of impact may exceed the severity of direct, on site impacts, yet SMCRA apparently does not contain the authority to require mitigation for impacts removed from the site of active mining. The DEIS should identify regulatory institutions, and legal instruments that may be employed to develop and implement mitigation strategies. We contend this to be a significant weakness in the current federal coal leasing program.

48-18 The document points out that browse ranges may be destroyed by mining and reclaimed with grass species. This type of reclamation could result in serious loss of premining wildlife habitat. Such a loss is not consistent with provisions of Surface Mining Control and Reclamation Act and any such losses would be a concern. Reclamation of premining shrub density and diversity has proven difficult, if not impossible, in arid areas. The success of shrub reestablishment and impacts of shrub loss should be discussed in Appendix 5.

9. Page 218 - Contrary to statements made in the DEIS, we believe the program level is an appropriate vehicle for addressing the problem noted here: "A large industry (such as coal development) moving into wildlife areas adds people and creates conditions generally not anticipated in the formulation of current strategic plans." It should be a primary objective of the DEIS to provide baseline data sufficient to allow state wildlife agencies to develop valid and comprehensive strategic management plans, and eliminate the reactionary situation which has typified previous input to the development planning process.

Mr. Dick Hartman
April 5, 1985
Page 5 - EIS 185/L2.

10. Page 218 - The management alternatives proposed here (shortened hunting seasons, reduced bag limits, limited quota seasons) are negative approaches to the problem of resource allocation. They are directed at reducing the amount of recreational opportunity available to the individual, in order to allow more individuals to participate. We feel this approach is unacceptable. An alternate approach is to increase the available resource base, through habitat acquisition and enhancement, and/or through providing access to public lands which has been denied in the past. Providing access to previously unavailable lands through easement would be a positive step to mitigating the impact of increasing human population.

11. Page 287 - The second paragraph dismisses the need for detailed analyses of resource commitments and trade-offs at the program level, because these analyses are supposed to be accomplished at the regional and local EIS level. We again agree that local and regional impacts are best assessed at those levels. However, wildlife impacts have not often been adequately addressed in previous local or regional EIS. Consequence of human population growth never draws attention until after coal is leased and developed, and the results of population influxes are apparent. At that point, it is too late to incorporate population concerns into the EIS process for formulation of mitigation strategies. The "uncertainty" in projected distribution of population growth patterns (and coal development patterns) is a fundamental flaw in the proposed action (continued leasing) and any alternative action that does not define the future pattern of development. In order to provide meaningful projections of population related effects for each of the coal management strategies, as discussed in this DEIS, it will be necessary to analyze, in detail, the population effects realized to date and provide a baseline. Future effects and mitigation strategies may then be formulated.

Please forward these comments to the appropriate Federal and State Agencies and contact us if we may be of further help.

Sincerely,

Francis Petera

FRANCIS PETERA
ASSISTANT DIRECTOR
OPERATIONS

FP:RBM:ssc
cc: Game Div.
Fish Div.



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality

LAND QUALITY DIVISION

HERSCHLER BLDG. - THIRD FLOOR
122 WEST 25TH

TELEPHONE 307/777-7756

CHEYENNE WYOMING 82002

MEMORANDUM

TO: Robert E. Sundin, Director

FROM: Lyle Randen, Administrator, Land Quality Division *Lyle Randen*

DATE: March 19, 1985

SUBJECT: Request for Comment on Federal Coal Mgt. Program

The Land Quality Division has reviewed the Federal Coal Mgt. Program. We have identified some specific areas of concern and would like to offer the following comments:

1. In respect to page 347 only two EMRIA Reclamation Study Area reports exist for Wyoming, neither of which are in the Powder River Basin. For comparison 48-23 19 EMRIA reports exist for Montana. Since the Powder River Basin is one of the most intensely mined areas in the Western U.S., it would seem that more research in the basin is warranted.

2. The discussion on Alluvial Valley Floors (AVF's) and their relationship to 48-24 the coal leasing program should be expanded.

3. The date listed in Table 1-10 (Page 50) for LOD Rules and Regulations is 48-25 not current. Those regulations have been revised several times since 1975 and are currently undergoing another revision.

4. The BLM discussion on p. 199, of evaluating reclamation potential on a site specific basis is supported by the Land Quality Division.

If any mining of materials is necessary as a part of this plan then the individual performing that mining must contact the Department of Environmental Quality, Land Quality Division.

We thank you for the opportunity to comment on this document.

LDR:KMO/kv

cc: Bob Gurgevich
Bill Kearney
Rick Engelmann

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 48

48-1a The Department of the Interior allocated funds in fiscal year 1985 for coal drilling to meet identified data deficiencies. The Department proposes to continue considering a federal coal drilling program in subsequent years if a need for such drilling to supplement existing data is identified. See Appendix 6 for an issue analysis concerning the need for a federal coal drilling program.

48-1b See response to Category 4, Data Adequacy, in the Categorical Analysis of Comments section of this chapter.

48-1c See response to comment 47-4.

48-2 The final decision to eliminate the \$100/acre minimum bid provision will be made only if the provision is replaced by an alternative superior provision. This provision remains under review.

48-3 Current regulations do not prohibit the use of the regional coal team (RCT) concept outside designated federal coal production regions. Therefore, separate regulations for RCTs operating under lease by application procedures are unnecessary. Also see response to comment 47-7.

48-4 Program oversight is a function of the Federal-State Coal Advisory Board, and this proposal would more appropriately be addressed by the Board. The Board considered such a suggestion at its March 21, 1985 meeting, and, though not rejecting it, deferred further consideration until some time in the future. The Board Chairman did suggest that the Board and regional coal teams perform this function for the next 18 to 24 months.

48-5 The 13.57 percent tax rate includes the 10.5 percent surface severance tax and the 6.5 percent ad valorem tax in Wyoming. As these taxes are not applied to the full price, the effective of combined rate is 13.57 percent. A more complete description of state taxes will be included in the final supplemental EIS.

48-6 Consultation with the State Historic Preservation Officer and the Advisory Council on Historic Preservation is required under the National Historic Preservation Act of 1966, as amended (Public Law 96-515), and under federal regulations (36 CFR 800) relating to cultural resource consideration and protection in federal actions. Such consultation would be conducted during regional EIS preparation and decisionmaking on federal coal leasing as well as during tract-level EIS preparation and later permitting. Direct and indirect impacts would be examined and mitigated through this process and by these laws and regulations, including unsuitability criterion 7 of the Surface Mining Control and Reclamation Act of 1977, as amended.

48-7 The text in the final supplemental EIS has been revised to reflect this data.

COMMENTS AND RESPONSES

48-8	Although Table 4-7 compares 1979 and 1985 socioeconomic projections, the reader should see Appendix 4, Socioeconomic Methodologies, to understand how the 1985 projections were made and analyses conducted. In general, coal-related employment and population projections are based on current projected change in a region's coal production.	
48-9	See Chapter 1 of the draft supplemental EIS, Approach of Supplemental EIS and Relationship to Ongoing Regional EISs (pages 15-16). This section states how this programmatic EIS is tiered to future coal EISs. The participation of other federal and state agencies in the scoping and early review process in future regional and site-specific EISs will ensure that these future documents are adequate and that failures in the past will not be duplicated in the future. The Proposed Action includes changes designed to improve data adequacy and public involvement and introduce science advisors.	
48-10	BLM agrees with this comment. Any meaningful analysis of secondary impacts must occur at the regional or site-specific EIS levels. The level of analysis in the programmatic EIS is merely to show that secondary impacts would occur, and a linear relationship is appropriate at this level of analysis. The impact analysis for wildlife at the regional or site-specific levels should be more sophisticated.	
48-11	The key to this objective is the availability of coal reserves for development, not the availability of new federal coal lease tracts. The available reserves required not to impede competition is finite but hard to measure. To provide federal coal leases to meet this objective does not imply an unrestricted or uncontrolled supply of lease tracts as a major coal owner in a state or region, the Federal Government must participate in supplying coal reserves to the market in some states and regions the supply of coal reserves is such that federal coal leasing is probably not needed in the immediate future. This decision, however, is made during activity planning and is the subject dealt with in the regional rather than programmatic EIS. The point of conflicting objectives of a coal leasing program is accurate, but the BLM feels can best be met through the proposed program.	
48-12	See response to Category 2, Leasing Levels, in the Categorical Analysis of Comments section of this chapter.	
48-13	BLM generally agrees with this comment. Also see response to Category 5, Science Advisors, in the Categorical Analysis of Comments section of this chapter.	
48-14	The text has been revised to document and qualify this statement.	

48-15	See Chapter 6, Trade-Offs and Commitment of Resources. Adopting the Proposed Action would not automatically result in the irreversible or irretrievable commitment of resources or set into motion any long-term environmental consequences, but it would be the first step in a process that could lead to such commitments.	
48-16	See response to comment 48-9.	
48-17	An addition has been made to the supplemental EIS to reflect your concerns.	
48-18	Tables 1-9 and 1-11 in Chapter 1 of the final supplemental EIS (Tables 1-8 and 1-10 in the draft) present an extensive list of federal and state laws that provide for mitigating adverse effects of coal development.	
48-19	The success of shrub reestablishment is discussed from a legal and research standpoint in Appendix 5 in the Regulatory Programs section. The statement is correct that shrub loss in wildlife habitats is a serious concern and that reestablishment is difficult. But reestablishment is being and can be accomplished as stated in the section on Reclaimed Area Management in Appendix 5.	
48-20	Baseline data of the type and location needed to allow states to develop comprehensive and up-to-date strategic wildlife plans does not exist at the programmatic level of analysis. Once site-specific mining plans are developed, baseline data can be developed for EIS analysis. Also see response to comment 48-9.	
48-21	The supplemental EIS has been changed to reflect the alternative approaches suggested.	
48-22	The socioeconomic analysis projects coal-related population growth (by development level, time period, and alternative) for each region. Data for specific lease tracts would be needed to project the distribution of population growth patterns within the region. The regional coal EISs will have lease tract data to project where coal development would occur, making it possible to assess population impacts on communities and counties as a basis for formulating mitigation strategies.	
48-23	Research and resource inventories other than the EMRIA studies exist for the areas being mined (see Appendix 5). Permitting of mining increases resource inventories and reclamation requirements for areas to be disturbed by mining. Continuing research to meet specific needs would be conducted to ensure successful reclamation.	
48-24	Alluvial valley floors are addressed by one of the 20 unsuitability criteria (Criterion 19) applied to federal coal lands during land use planning. The Chapter 2 discussion of applying the unsuitability criteria has been expanded.	
48-25	Table 1-11 in the final supplemental EIS (Table 1-10 in the draft) has been updated in response to this comment.	



STATE OF UTAH
OFFICE OF THE GOVERNOR
SALT LAKE CITY
84114

NORMAN M. BANGERTER
GOVERNOR

May 8, 1985

The Honorable Donald Paul Model
Secretary of the Interior
18th and C Streets, NW - Suite 6151
Washington, D. C. 20240

Dear Mr. Secretary:

This letter summarizes Utah's comments on: 1) the Draft Environmental Impact Statement (DEIS) Supplement on the Federal Coal Management Program, 2) royalty reduction guidelines, 3) partial implementation of the Office of Technology Assessment (OTA) recommendations, 4) proposed Section 3 Guidelines and, 5) reopening of the comment period on the recommendations of the Commission on Fair Market Value (FMV).

The state of Utah believes that a workable and predictable federal coal leasing program is vital to the energy security of the nation and essential to the economic development needs of this state. It is prudent to restore a workable leasing program in order that the need for new leasing can be assessed in each region and in order to establish improved procedures for evaluating the acceptability of coal lands leasing. The following observations and recommendations reflect this position.

Draft Environmental Impact Statement

The DEIS adequately addresses most of the features of the program which have changed since the original programmatic DEIS was released in 1979. Regular, careful assessment of the need to lease coal must be undertaken by each regional coal team. For this reason, we believe the Department should implement the existing program with the following program improvements or considerations.

As I mentioned, the energy security of our nation is a vital reason to continue the federal coal leasing program. However, several needs are worthy of mention in addition to those

Page 2
The Honorable Donald Paul Model
May 8, 1985

enumerated in Chapter 2, Page 57, of the DEIS. It is important to note that public body and small business set-aside leases contribute to the need for the continuation of the leasing program. In addition, there are several benefits mentioned in Chapter 2, which I feel could be amplified upon further. This includes a reduction in the number of bypass and emergency leases. A viable and active program of leasing will not prevent these situations completely, but their occurrence can be minimized, eventually encouraging more orderly and efficient development.

Furthermore, through maintenance of the coal leasing program, the coal industry has optimum opportunity for orderly growth, lessening the possibility of a cyclic pattern due to lease deficiency in any one area.

The production forecast in Chapter 3 of the DEIS can be a valuable tool for regional coal teams when determining if additional coal leasing is warranted in a region. The forecast, however, should be considered as only one of many tools utilized at the regional coal team level for determining future demand. Furthermore, meeting the aggregate demand for future production is only one of several goals for the coal program. Indeed, there may be a need to lease even when the aggregate numbers do not so indicate. For example, there is value in leasing to prevent existing leases with environmental or socioeconomic problems from coming into production. The leasing of more economically attractive coal which does not have such environmental or socioeconomic problems can preclude development of the problematical existing leases. This, of course, needs to be coupled with the maintenance of diligent development, so that the undeveloped existing leases are relinquished. Additionally, the coal market has many unique niches which may not be reflected in aggregate demand forecasts. To provide coal for such unique opportunities requires careful region-by-region market assessment of the need.

There is also a need to continually reevaluate the demand for coal on a regional and national basis. While the forecasts in Chapter 3 may present an accurate picture of the coal market today, they are subject to the same frailties which have plagued previous forecasts. Indeed, the track record of forecasting coal demand by government or private sector parties has not been particularly accurate.

Royalty Reduction Guidelines

The role provided for the governors is appropriate, but the Department should be extremely cautious in implementing these guidelines in order to avoid numerous and/or successive royalty reduction applications which would result in widespread or continuous reductions in royalties. Such widespread or continuous

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The Honorable Donald Paul Hodel
May 8, 1985

reductions could permanently skew the marketplace, leaving sound mining operations at a competitive disadvantage while depriving the federal government and states of needed revenues. The guidelines provide for a definite term for royalty reduction. If a reduction is granted, it should always be temporary with a return to the old rate.

Partial Implementation of the OTA Recommendations

Utah has long been an advocate of a proactive and involved Regional Coal Team (RCT) and open public involvement in the coal activity planning process. Both of these principles are a common thread in the proposed implementation. In addition, the call for other resources information, rather than just coal resource information, should be applauded. The caveat in establishing data adequacy standards, however, is that these standards should originate at the Regional Coal Team level. At the recent Coal Advisory Board meeting in Denver, a resolution passed which stated that all delegable data adequacy standards and issues should be determined at the Regional Coal Team level, not at the Washington level. Utah strongly encourages implementation of that procedure. Finally, the use of threshold analyses in the land-use planning process is supported, provided that the Regional Coal Team considers, but is not stringently controlled by, these analyses. This is one of the checks and balances to de facto federal land-use planning in Utah.

Section 3 Guidelines

Guidelines, which prohibit the issuance of any additional mineral lease once a lessee has held a coal lease for ten (10) years and has not produced coal in commercial quantities, are an undue burden. The prohibition, if used, should be placed on acquisition of additional coal leases. Also, an in-lieu advance royalty system which is progressively nonrefundable to the lessee should be a viable alternative to due diligence development in maintaining the lease.

Fair Market Value

Utah is in an unique position with virtually 100 percent of its coal production emanating from underground mines where the front-end costs of mine development are high. Maximizing bonus payments for federal leases could exacerbate the high development costs problem. In addition, lower development costs on federal leases would enhance the development potential of existing, adjacent state leases.

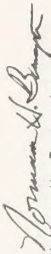
While this issue is a double-edged sword, it appears that the long-term benefits to the state of Utah would be most enhanced if the \$100.00 per acre minimum bid were retained. History in Round I

leasing has shown that sealed, followed by oral, bidding truly reflects the market demand in the tracts which were sold. The most important aspect of the fair-market value issue is to maintain the public's confidence in the bidding and awards system.

In summary, the need for a workable and predictable federal coal leasing program is essential to Utah's and the nation's economic and environmental well-being. I support the proposed action outlined in the DEIS to continue the Federal Coal Management Program, including revisions to the program made in 1982, 1983, and changes proposed in 1984 and 1985, with the above-noted considerations and concerns.

I look forward to a renewed state/federal partnership of coal management to our mutual satisfaction and in the interest of sound resource development. If you have questions, or need further information, please contact Ruth Ann Storey of my office, (801) 533-5231, or Ronald W. Daniels, Chairman of the Minerals Leasing Task Force, at (801) 538-5340.

Sincerely,


Norman H. Bangerter
Governor

NHB/och

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 49

- 49-1 Providing public body and small business set-aside leasing opportunities is an important aspect of providing opportunities for industry to acquire federal coal leases as a means of addressing the Nation's energy needs. As such, public bodies and small businesses were not singled out as being unique.
- 49-2 These are valid considerations, which are addressed in the Purpose and Need section of Chapter 2.
- 49-3 The Federal-State Coal Advisory Board recommendation favoring development of data adequacy standards by regional coal teams will be presented to the Secretary of the Interior for decision along with the other program decisions emanating from this supplemental EIS.
- 49-4 These guidelines reflect the current restrictions of the Federal Coal Leasing Amendments Act. The changes in the guidelines that the commenter proposes may be made only if Congress amends this law to provide for these changes.

DEPARTMENT OF NATURAL RESOURCES

DAVID H. GETCHES, Executive Director
1313 Sherman St., Room 718, Denver, Colorado 80203 866-3311Geological Survey
Board of Land Commissioners
Mined Land Reclamation
Division of Mines
Oil and Gas Conservation Commission
Division of Parks and Recreation
Soil Conservation Board
Water Conservation Board
Division of Water Resources
Division of Wildlife

50

May 9, 1985

Secretary Donald Hodel
U.S. Department of Interior
18th and C Streets, NW
Washington, D.C.

Dear Mr. Secretary:

Thank you for the opportunity to review the Draft Environmental Impact Statement Supplement, the Coal Unsuitability Criteria Review and other elements of the revised coal leasing program. The State of Colorado has compiled comments on these proposals as outlined in the following sections.

Draft Environmental Impact Statement Supplement

The Draft Supplement adequately addresses most of the features of the coal program that have changed since the original 1979 programmatic EIS. State agencies have raised several concerns which are summarized below and, where appropriate, explained further in attachments.

- 1) The State strongly supports the ongoing role of the regional coal teams as the primary mechanism to evaluate regional coal leasing needs into the future. We believe the Department should implement the existing program, with the various program improvements, and provide for regular assessments by the teams of the need to lease coal.
- 2) The production forecast in Chapter 3 provides a tool for the teams to use, along with other pertinent data to determine future coal demand. Leasing decisions should consider the merits of offering new tracts to preclude development of existing leases with severe socioeconomic or environmental constraints.
- 3) The final EIS should expand its review of fee coal exchanges to provide a more complete description of the federal coal program including the analysis of the Department's exchange policy.
- 4) The document appears to accurately describe the impacts of the coal program on wildlife and is an improvement over the 1979 version. We are concerned about a possible change in the

COMMENTS AND RESPONSES

Secretary Donald Hodel
May 9, 1985
Page Two

50-2 Unsuitability Criterion 15 as described in the Unsuitability Criteria Review document. If that recommendation is followed, impacts to resident wildlife could be more severe than described in the Draft Supplement. Clarification should be provided as to how the recommended change affects the analysis in the draft.

- 5) More detail should be provided in the water resource impact section on the availability of surface and ground water for coal mining and the procedures for obtaining the right to use surface and ground water. The prospective coal lessees are often unaware of the water statutes and procedures to be followed to obtain the right to use ground or surface water in the State of Colorado.

50-3 Much of the area in Colorado available for coal leasing under this program is located in over-appropriated river basins. Detailed plans to augment consumptive use of water in the coal mining activities may be required in some areas of Colorado.

Federal agencies should be aware that water use, allocation, and administration are Constitutionally and historically exclusive concern of state law. Federal requirements directed at types or amounts of water use, absent specific pre-emptive intent from Congress, are improper.

- 6) The document should clarify which federal agency will have responsibility for ensuring that the necessary surveys and consultations are accomplished to comply with Section 106 of the National Historic Preservation Act.

- 7) The Colorado Department of Highways is concerned about the level of mitigation provided for use of state highways situated within lease areas. A letter from the Department is attached.

Data Adequacy Standards

50-4a Western States have supported the concept of data adequacy standards as a means to improve the quality of data used to make decisions and to improve public confidence in the coal lease program. It is strongly recommended that these standards be set by the regional coal teams and developed on a region-by-region basis. This will provide the needed flexibility to respond to the critical environmental and socioeconomic issues in each region.

National Coal Model

50-4b The Department should affirm in writing a policy that requires them to run the National Coal Model to be run using assumptions provided by regional coal teams. This has been recommended by the Federal-State Coal Advisory Board for several years.

CONSULTATION AND COORDINATION

STATE OF COLORADO



DEPARTMENT OF HIGHWAYS

4201 East Arkansas Ave
Denver, Colorado 80222
(303) 757-9011

April 9, 1985

Laurie Mathews
Assistant to the Director
Department of Natural Resources
1313 Sherman Street, Room 718
Denver, Colorado 80203

Dear Ms. Mathews:

The Colorado Department of Highways has completed its review of the Draft Environmental Impact Statement Supplement for the Federal Coal Management Program and has several concerns about the coal leasing program and its direct impacts on State highways in these leasing areas within Colorado. We are particularly concerned about the inadequate provision for and commitment to mitigation measures both in this document and site-specific documents for individual coal-mining projects.

But first, it should be noted that this Department had substantial comments on the Uinta-Southwestern Utah Coal Draft EIS and these concerns were never adequately addressed or resolved in the subsequent leasing program (note attachment).

To provide some background on this point, we offer the following discussion. Since 1979, certain State highways have experienced significant impacts (damage) when a lease involved a continuous truck haul or transportation of coal to loadouts served by the existing highway system. In addition, the stipulating of coal leases by the BLM to reduce transportation impacts such as the Paonia-Hotchikiss (SH 133, SH 92) area has also proven to be ineffective due to the lack of follow through on these lease stipulations. In this instance, continuous coal haul was stipulated in the lease as a "temporary" measure and in later leases became a permanent method of operation with virtually no mitigation being provided. Therefore, this Department requests that three things be incorporated into the coal leasing program in Colorado as noted below:

First:
That the BLM discourage coal leases which propose or require a continuous coal haul on a public highway system, or,

Secretary Donald Hodel
May 9, 1985
Page Three

Fair Market Value

50-4c The Department should abandon the procedure of accepting bids as low as 25 percent of the pre-sale estimate. Bid minimums should be increased to between 75 to 90 percent of pre-sale estimates to assure the public that coal is being leased for its fair market value.

We question the proposal to keep bids secret and to eliminate the \$100 per acre minimum, without specifying a substitute level.

Lease by Application

50-4d Decisions to move to a lease-by-application process or to modify the boundaries of the region should be the responsibility of the regional coal team. The team should retain the option to continue under a lease-by-application system and this should be provided for in the regulations.

Coal Unsuitability Criteria Review

The Colorado Division of Wildlife has participated throughout the development of the unsuitability program and has a number of specific concerns relating to the draft criteria. Their memo outlining these issues is attached.

Program Oversight

50-4e The Federal-State Coal Advisory Board should establish a program oversight task force composed of federal and state agencies, industry and public interest groups. The task force would report to the Board on program implementation one year after the leasing program resumes operation.

Again, we appreciate the opportunity to provide comments on the federal coal program. We look forward to your response to these issues and the release of the Final EIS on the Federal Coal Management Program.

Sincerely,

David H. Getches
DAVID H. GETCHES
Executive Director

DHG:kod
Attachment
6298

COMMENTS AND RESPONSES

Laurie Mathews
April 9, 1985
Page Three

Thank you for the opportunity to provide comments on this document. We hope they will help in finding a reasonable solution to these highway transportation problems and the resultant costs.

Very truly yours,

Barbara L. S. Choccol
Barbara L. S. Choccol
Manager
Project Development Branch

Attachment

Laurie Mathews
April 9, 1985
Page Two

Second:

That any lessee who proposes to haul coal on the State highway system (either temporarily or permanently) be required to first upgrade any inadequate roadways (through overlays, channelizations, adding shoulders, etc.) to a reasonably safe and structurally adequate standard, and,

Third: That the lessee provide money in an escrow account for the Department to use on an annual basis for maintenance of those public roadways being severely impacted by a continuous coal haul.

The above requirements will not solve all coal haul impacts to the State highway system, but they would allow us to make the necessary roadway improvements to protect the roadway and pavement structure and increase the level of safety for the traveling public.

In the past, the coal leasing program has not always paid its way in mitigating transportation impacts to highway systems that it directly impacts, and the general public has been forced to pay these costs through our continued and expensive maintenance of these highways. It is our opinion that the leasing program should at least pay their fair share of these mitigation and maintenance costs which result directly from the BLM coal leasing program.

The leasing of marginally economic coal resources has a very significant impact on highway systems where they are utilized for coal haul. The operators of marginally economic coal mines are reluctant to provide the necessary mitigation and the program in place has allowed transfer of this responsibility from the private sector to state and local entities. For this reason, we would like to suggest that the BLM coal leasing program be structured to encourage leasing in areas that can easily be linked to existing rail transport. This strategy would enhance the economic viability of the leased resource and minimize transportation impacts.

In another perspective, we have found that inadequacies in the transition from programmatic decisions to site-specific decisions cause expensive continuing impacts. Prospective coal lessees need to anticipate from Management Program commitments what criteria they shall need to satisfy. Therefore, this Draft and Final EIS need to make those commitments and state that site-specific decisions will be based on both impacts and provision of mitigation.

STATE OF COLORADO

DEPARTMENT OF HIGHWAYS

P.O. Box 2107
Grand Junction, Colorado 81502-2107
(303) 742-1862



June 23, 1983

Mr. Stephen O. Ellis
State Clearinghouse
520 State Centennial Building
1313 Sherman Street
Denver, CO 80203

SUBJECT: REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT (WEST-CENTRAL COLORADO PORTION) FOR UINTA-SOUTHWESTERN UTAH COAL

Dear Mr. Ellis:

The Colorado Department of Highways (CDH) District III office has reviewed the above Draft Environmental Impact Statement (DEIS), and our primary concern of this coal leasing program is the impact to state highways serving this leasing area. The DEIS is very weak in its analysis of transportation impacts, and we would recommend that additional analysis be done on transportation impacts.

The leasing of federal coal in west-central (Delta County) Colorado would adversely affect the state highway system in these potential lease areas, particularly if the coal is transported by truck as proposed for the Cedaredge lease. Both SH 133 and SH 65 are low volume, rural secondary roads which cannot withstand the physical abuse of continued and repetitive heavy truck hauling of coal. By today's standards both highways are substandard in design and stabilization requirements. We have already experienced significant damage on SH 133 from repetitive truck hauling of coal which has resulted in significant road surface (pavement) breakup and deterioration, shoulder breakdown, potholing, culvert failures and increased numbers and severity of vehicular accidents. These impacts and problems need to be addressed and mitigated in the Final Environmental Impact Statement (FEIS).

Therefore, if additional federal coal leases are awarded in either the Paonia or Cedaredge areas, we would request mitigation in maintaining the existing state highways in these areas, if lease plans include truck hauling of coal on the highway system. This mitigation would need to be stipulated by the BLM in the lease and would be accomplished by the leaseholders by either providing money directly to the Colorado Department of Highways for

Mr. Stephen O. Ellis
UINTA-SOUTHWESTERN UTAH COAL DEIS
June 23, 1983
Page 2

additional stabilization through thick overlays on these highways or by the mine leaseholder placing funds into an escrow account in the Colorado Department of Highway's name. This money would then be used on an annual basis to make the minor roadway improvements, overlays and general repairs resulting from the truck haul.

In addition, any new access points for the mine-loadout/stockpile areas which directly access the highway system will have to be fully channelized (left-turn lane and acceleration/deceleration lanes) and yellow flashing light installed to warn the traveling public of heavy truck turning movements.

One option that would reduce the impacts and the necessary mitigation would be to utilize a separate haul road system that was interconnected with train loadout facilities which were located close to the mine areas. At Cedaredge the feasibility of a railroad spur to serve the area should be investigated. At a minimum the coal loadout should be located somewhere other than the City of Delta, as that is totally incompatible and unacceptable to us because of the long coal haul associated with this option. The impacts would have to be totally mitigated by the coal lessee which could involve some reconstruction of SH 65 between SH 92 and Eckert.

Increased accidents on both of these roadways can only be mitigated with reconstruction of the roadway to make it safer, which includes the improvement of sight distances, flattening slopes, easing curves and adding shoulders which give additional width (vehicle refuge areas) to the existing highway. If the roadway cannot be upgraded, the only other way to limit or reduce truck/car accidents is to remove the truck haul from the highway system (separate haul roads).

The DEIS on page 139 states that SH 133 is under construction with a new alignment for use by general traffic and the old highway for use by trucks hauling coal. This statement is misleading and not entirely accurate. There will eventually be a new alignment for SH 133 between Terror Creek (two miles east of Paonia) and a point three miles east of Somerset. This construction of a new alignment for SH 133 could take as much as another three to five years to complete. There is no alignment alternative to SH 133 planned between Terror Creek and Hotchkiss. The existing roadway will be improved in this area and that improvement will not begin until the Terror Creek to Somerset construction is complete. There is no improvement/reconstruction planned for SH 92 between Hotchkiss and Delta.

COMMENTS AND RESPONSES

RESPONSES TO COMMENT LETTER 50

- 50-1 The Exchange section of Chapter 1 has been expanded in the final Supplemental EIS. Also see response to Category 12, Exchanges, in the Categorical Analysis of Comments section of this chapter.
- 50-2 See response to this comment in the Responses to Other Unsuitability Review Comments section at the end of Appendix 1.
- 50-3 The Supplemental EIS does not present further detail on availability of water because of limited data disaggregated by coal regions. The draft Supplemental EIS points out that administering water is a state function (page 261 of the draft Supplemental EIS) and that in many areas water is fully appropriated (pages 265-266).
- 50-4 BLM has responsibility for the needed surveys and consultations in compliance with Section 106 of the National Historic Preservation Act.
- 50-4a See response to Category 4, Data Adequacy, in the Categorical Analysis of Comments section of this chapter.
- 50-4b The Federal-State Coal Advisory Board Charter (see Appendix 2) contains a provision (paragraph 7.5.(5)) calling for the use of market analyses prepared by BLM and requested by the regional coal team.
- 50-4c See response to comment 47-4.
- 50-4d Regional coal teams (RCTs) will have the responsibility to examine the need to change the boundaries or to discontinue a federal coal production region. Any changes in the status of a region, as recommended by the RCT, will be forwarded to the BLM Director for action. The RCT recommendation would include any proposed changes to the RCT charter, specifically changes relating to retention of the RCT function in the absence of a designated federal coal production region.
- The Department of the Interior believes that the existing regulatory framework allows for RCTs where leasing has moved to leasing by application procedures. Therefore, no more regulations are needed to address this situation.
- 50-4e See response to comment 48-4.
- 50-5 The Proposed Action and the leasing alternatives are designed to address the impacts of coal leasing on environmental and socioeconomic conditions before coal leasing decisions are made. Regulation of traffic on state and local roads, however, is a function of the state governments and beyond BLM's jurisdiction as a federal agency. State and local governments properly have the authority to control the use of their roads, including the requirement of compensation for damage or special maintenance funds. States may use the permitting process or other procedures to achieve this end.

Mr. Stephen O. Ellis
UNITA-SOUTHWESTERN UTAH COAL DEIS
June 23, 1983
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In addition, there is currently no work proposed by CDH on SH 65 between SH 92 and Cedaredge which makes this highway largely inadequate for a truck haul. These items need to be further addressed and clarified in the FEIS.

Because of impacts resulting to the existing transportation systems serving the potential coal lease areas, it will be necessary to include specific mitigation in the FEIS for these highway sections. This mitigation will also need to be included as stipulations in the BLM coal lease and not left to the permitting stage.

We appreciate the opportunity to review this DEIS and will be looking forward to reviewing the FEIS for these coal leases.

Very truly yours,

R. P. MOSTON
DISTRICT ENGINEER

Laurence R. Abbott
By LAURENCE R. ABBOTT
DISTRICT ENVIRONMENTAL MANAGER

LRA/jme

cc: Clevenger
Chocol
Moston/Sturm / Leonard/Perske
Sabin/Jackson
Bradbury
File

CONSULTATION AND COORDINATION

50-6

See response to comment 50-5.

50-7

Through legislation such as the Mineral Leasing Act and the Federal Coal Leasing Amendments Act, Congress has allowed a significant portion of the bonus bids, annual rents, and royalties to be returned to the states in which the leased coal is located, to be used in any way the state believes appropriate. The states now receive 50 percent of the bonus bids, rents, and royalties, along with other revenues from such sources as severance taxes and highway use taxes. The states may use these revenues to mitigate impacts to highways if they choose.

50-8

The text has been revised. Site-specific decisions cannot be made until a proposed tract is identified and potential impacts analyzed.

50-9

See responses to comments 50-5, 50-7, and 50-8.

51

PATTY KLUVER

Route 1, Box 2046
 Forsyth, Montana 59327
 April 13, 1985

Mr. Robert Burford, Director
 Bureau of Land Management
 Office of the Dept. of Interior
 Washington, D. C.

Re: Fed. Coal Management
 Program Draft EIS

Dear Sir:

Recently, I reviewed the above named volume, and perhaps it would be more effective if a critique is addressed direct to you. To judge from past experience, writing the D. EIS staff is a waste of time.

The volume is not an EIS. The only criteria on which it is based is "Fair Market Value." There is no mention of the adverse, even fatal impact of salts laden waste water which drains from what was once a coal aquifer. This adverse condition will continue for thousands of years, or forever, and should be included as a irreplaceable loss.

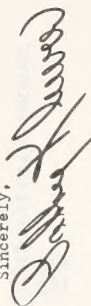
Not only is the loss of the coal aquifer a concern of the site specific, but it should be added that all drainages and underground water supplies from the aquifer will be adversely effected, including acreages, and costs to the property owners adjacent to the mine site, and eventually to those even far away.

If a mining company were forced to submit bids to cover the actual costs to the environment, rather than fair market value, the price would be too high, but I suppose, back in Washington, it is difficult to grasp the damage. Come out and I will show you.

Why do your PR people tell landowners, "You are but stewards of the land, to care for it and leave it in as good or better shape than when you took over," while, on the other hand, they are planning and scheming to destroy this fragile landscape for "fair market value," so that it can never come back?

There sure seems to be a double standard of values in the Dept. of Interior, today.

Sincerely,



COMMENTS AND RESPONSES

RESPONSES TO COMMENT LETTER 51

- 51-1 Impacts to ground water quality are discussed on page 260 of the draft supplemental EIS. The amount of increase of salt in ground water would vary from no significant change to an increase of many times the premining levels. Also unknown is how long this change would occur, but it is commonly acknowledged that increased salinity would continue for a long time, perhaps hundreds or thousands or years in some areas. Experience has shown, however, that replacement water generally exists.
- 51-2 Now altered ground water moves through the system over the long term has not yet been adequately investigated, but the geochemical processes known to occur in disturbed and undisturbed overburden suggest that the dissolved solids concentrations decrease as water moves away from the mine site. This lowering of concentration tends to limit the impact to the area in, around, and just downstream from the mine. Acreages and costs cannot be examined at this level of environmental assessment because specific coal mining locations are not known.



52

United States Department of the Interior

NATIONAL PARK SERVICE
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

480

MAY 8 1985

Memorandum

To: Director, Bureau of Land Management (140)

Through: *Allen* Assistant Secretary for Fish and Wildlife and Parks *May - 9 1985*

From: Director, National Park Service

Subject: Draft Environmental Impact Statement Supplement on the Federal Coal Management Program

We have reviewed the subject document and offer the following comments:

The DEIS (page 67) indicates that in addition to the unsuitability criteria screen of land use planning, areas may be eliminated for further consideration for coal leasing to protect a noncoal resource that is locally important or unique through the use of the multiple use trade-off screen. Therefore, we presume that in addition to Section 522 of the Surface Mining Control and Reclamation Act (SMCRA), BLM envisions the multiple use trade-off screen as the principal land use planning mechanism for protecting units of the National Park System from the effects of coal development on adjacent tracts leased under the federal coal leasing program. Given the resulting importance of the multiple use trade-off screen, the DEIS should provide a more thorough discussion as to how this particular step in land use planning will be implemented from a practical standpoint in the proposed leasing program and how the implied resource protection will be achieved. The Service's experience to date does not support the DEIS assertion that the multiple use trade-off screen will insure the protection of adjacent park resources and visitor values.

We support the reinstatement of the threshold concept in the coal leasing regulation (page 71) due to the important role of the concept in the assessment of cumulative hydrologic impacts.

The DEIS (page 259) states that "strip mining laws... require that all surface runoff be impounded and treated until it meets specified water quality standards." The statement should note that SMCRA and applicable State laws require that coal mining operations be conducted "so as to prevent, to the extent possible, using the best technology currently available, additional contributions of suspended solids to stream flow, or runoff outside the permit area." Section 515 (b) (10)(B)(i) - (SMCRA). In the past, interpretation of this statutory provision has resulted in the widespread use of sedimentation ponds and thus the impoundment and treatment of all surface runoff from coal mine sites. However, some coal mining operations in the West have recently

CONSULTATION AND COORDINATION

2

52-3 implemented "alternative sediment control plans" which provide sediment control with limited use of sedimentation ponds, and thus not all runoff is impounded. The statement in the DEIS that strip mining laws require "impoundment" of all surface runoff should be corrected.

52-4 The DEIS (pages 261-267) implies that the cumulative impacts of small increases in surface and ground water salinity due to coal mining activities are limited to mining activities occurring in the Colorado River Basin of the Green River-Hans Fork and San Juan Coal Regions. The DEIS should indicate that the potential for such cumulative hydrologic impacts also exists in the Fort Union, Powder River, and Uinta-Southwestern Utah Coal Regions.

52-5 The DEIS needs to consider effects of the proposed Federal Coal Leasing Program on the National Natural Landmarks Program in Chapter 4- Description of the Environmental and Environmental Consequences. There are six registered natural landmarks, nine designated landmarks, and 233 potential landmarks within the various coal regions covered by the document. A breakdown of these various categories by coal regions is enclosed.

52-6 In the discussion of trade-offs (pages 287-289) which could result from implementing the Proposed Action or any of the alternatives, trade-offs with respect to water resources are not included. Given the impacts to water resources described on pages 258-269, the document should incorporate the impacts of mining to the quantity and quality of surface and ground water in the trade-off discussion.

52-7 Table 6-1 (page 288) indicates that "N" irreversible or irretrievable impacts to surface water, ground water, or water use are expected as a result of the Federal Coal Management Program. This table does include a footnote which indicates that the degraded ground water quality would gradually return to the premining condition, but the process may take a considerable period of time. We recommend that this table be modified to state that present research and monitoring generally indicates that the hydrologic balance of coal mine sites can be restored to support the post-mining land use and be compatible with adjacent hydrologic system; however, final, absolute determinations as to whether the hydrologic impacts of coal mining operations in the Western United States result in "irreversible" or "irretrievable" impacts have yet to be made. For example, in addition to the remaining ground water quality questions identified in the table's footnote, information is still not available with respect to differential settling of spoils and subsequent hydrologic impacts to reconstructed land surfaces and stream channels or to the reestablishment of water tables in spoils. Also, Table 6-1 indicates that no long-term impacts to surface water are expected. This is not consistent with the cumulative hydrologic impact discussions provided on pages 266-267 of the DEIS on salinity impacts to surface water.

52-8

COMMENTS AND RESPONSES

NATIONAL NATURAL LANDMARKS			
Coal Region/State	Registered	Designated	Potential
Fort Union Montana North Dakota	1 1 1	3 0 0	2 5 5
Powder River Montana	0	1	1
Wyoming	1	1	26
Green River-Hams Fork Colorado	0	0	28
Wyoming	1	3	31
Utah-Southwestern Utah Colorado Utah	0 2	0 1	33 96
San Juan River Colorado	0	0	11

3

We appreciate the opportunity to review this DEIS and look forward to working with your staff on any of the issues identified in our comments. For further information on the National Natural Landmarks Program and our comments pertaining to water resources, please direct your staff to contact Ms. Carole Madison in our Rocky Mountain Region office (FIS 776-8699) and Dan Kimball in the Service's Water Resources Division (FIS 776-8765), respectively.

Dan Kimball

Attachment

CONSULTATION AND COORDINATION

RESPONSES TO COMMENT LETTER 52

- 52-1 An expanded discussion of the multiple resource trade-off screen has been incorporated into Chapter 2 of the final supplemental EIS. More detailed information exists in BLM Manual 1623.
- 52-2 BLM's land use planning system encourages early input from the public and federal and state agencies to identify sensitive resources. This process allows the land manager to pursue a number of alternatives in evaluating the relative values of the mineral and renewable resources. Should adjacent park resources and visitor values be at enough risk if the federal coal were considered further for leasing, then the surface manager can protect those sensitive values by eliminating an appropriate number of surface acres from further coal planning analysis. Further opportunities to protect park values can occur during the examination of proposed leasing tracts during activity planning and again during mine permit review.
- 52-3 Surface mining regulations (30 CFR 715.17(a)) require treatment of surface runoff by siltation structures. Most mines control siltation with sedimentation impoundments. Some mines are using other forms of detention, such as contour trenching or furrowing, so that the runoff can be used to aid reclamation. The effects downstream would be similar for all forms of detention. The text has been changed to clarify this point.
- 52-4 The text has been changed to state that the potential for cumulative hydrologic impacts exists.
- 52-5 With certain exceptions, national natural landmarks have been declared unsuitable for coal development under criterion 8 of 43 CFR 3961.1. Moreover, assessing impacts to specific national natural landmarks is not within the scope of the supplemental EIS because the location of coal mining under the Proposed Action or alternatives or the national natural landmarks that would be involved are unknown. Future, more site-specific regional coal program analyses and project evaluations would address such impacts.
- 52-6 The impacts of mining on water resources has been added to the trade-off discussion in Chapter 6 as suggested.
- 52-7 The text has been changed to incorporate this recommendation.
- 52-8 Table 6-1 has been corrected.

53

S F Coal Corporation

6200 Uptown Blvd. NE, Suite 400
 B. 27010
 Albuquerque, New Mexico 87125
 505/881-3050

May 20, 1985

Mr. Jack D. Edwards, Project Leader
 Bureau of Land Management
 Division of EIS Services
 555 Zang Street, 1st Floor East
 Denver, Colorado 80228

Dear Mr. Edwards:

You will find on the enclosed pages the comments of SF Coal Corporation with regard to the Federal Coal Management Program Supplemental EIS.

The BLM is to be commended for an excellent analysis. Site specific efforts of coal mining leasing and can properly be handled by BLM and OSM, with input from other affected agencies on a case-by-case basis.

Please provide a copy of the EIS to the undersigned and to Mr. Jeffrey T. Williams, Law Department, Santa Fe Southern Pacific Corporation, 224 South Michigan Avenue, Chicago, Illinois 60604.

Very truly yours,

George G. Byers
 George G. Byers
 Director of Public Affairs

GGB:gem
 Enclosure

A Santa Fe Southern Pacific Company

COMMENTS AND RESPONSES

COMMENTS OF SF COAL CORPORATION
 TO THE FEDERAL COAL MANAGEMENT PROGRAM
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

1. The Department is to be commended for including a discussion of fee coal exchanges in this Supplemental EIS. Fee coal exchanges such as the McKinley County Exchange between the U. S. Government and the Cerrillos Land Company will offer the Government the opportunity to consolidate tracts of coal in an area with none of the environmental and land use conflicts found elsewhere in the San Juan Basin. Along with the absence of such conflicts in these consolidated tracts, other benefits are expected to be much higher bonus bids and an earlier receipt of production royalties than if tracts had not been consolidated through exchange.

2. Table 1-4, page 20

The discussion under the heading entitled "Fee Mineral Exchange" dealing with the McKinley County Exchange and New Mexico is in error when it states that the lands involved "total over 45,000 acres." Actual acreage is about 11,100 acres.

3. Federal and State Constraints on Coal Management, page 41

In addition to the constraints listed, a specific constraint to federal leasing by such railroad-affiliated coal companies as SF Coal Corporation is section 2(c) of the Mineral Leasing Act of 1920. This archaic statute is used by some members of the U. S. coal industry to unfairly restrict SF Coal Corporation and a handful of other companies from freely participating in federal coal lease sales. True competition for federal coal will only be accomplished when Section 2(c) has been repealed.

53-1

53-2

CONSULTATION AND COORDINATION

4. Under the discussion of Transportation, page 163

It is stated that "The Atchison (sic) Topeka and Santa Fe (AT&SF) Railroad (sic) crosses the region and the Star Lake Railroad has been completed to the Lee Ranch Mine." The Atchison, Topeka & Santa Fe Railway does run east-west through the southern part of the San Juan Basin. However, the Star Lake Railroad has not been built. The Lee Ranch Mine of SF Coal Corporation is served by a private rail spur.

5. In the discussion of Railroads, page 168

It should again be reflected that the Star Lake Railroad has not been built. The second paragraph under "Railroads" on this page is incorrect, at least to that extent. It is our understanding however, that a certificate of public convenience and necessity authorizing construction and operation of the Star Lake Railroad was approved by the Interstate Commerce Commission on December 7, 1985.

6. In the Section on "Native American Issues", page 179

There is a rather lengthy summary of the concerns of the Navajo Tribe regarding coal development in the San Juan Basin, specifically in lands under the jurisdiction of the Eastern Navajo Agency. Enclosed is an article from the March 23, 1985 edition of the Albuquerque Journal which discusses the Navajo Tribe's proposal to construct its own coal-fired power plant east of the Navajo Agency. Regarding the Tribe's alleged concerns about the environmental and cultural impacts of federal coal development, the BLM should satisfy itself that there are in fact no discrepancies between the Tribe's position as stated in this draft EIS and that stated by the Tribe through the newspaper article.

-2-

7. Page 108, "Northern and Southern Pueblos"

This section mentions that the Sandia Pueblo is concerned about the effects of coal mining on religious and cultural activities. Sandia Pueblo is located adjacent to the northern city limits of Albuquerque, and is over 60 miles from the closest area of potential federal coal leasing activity. None of the Pueblo lands would be involved in federal leasing activities, and the Pueblo itself conducts no religious or other activities so far from its homeland.

-3-

COMMENTS AND RESPONSES

RESPONSES TO COMMENT LETTER 53

- 53-1 Table 1-8 in the final supplemental EIS (Table 1-4 in the draft) has been corrected in response to this comment.
- 53-2 The Department of the Interior will continue to consider this view in any relevant deliberations regarding the future of the federal coal management program.
- 53-3 The text has been revised in response to this comment.
- 53-4 The text has been revised in response to this comment.
- 53-5 The Navajo Tribe's proposal to build its own coal-fired powerplant does not justify the elimination of the environmental concerns of the Navajo people within the jurisdiction of the Eastern Navajo Agency and off-reservation administrative units of the Bureau of Indian Affairs.
- 53-6 The text has been revised in response to this comment.

CONSULTATION AND COORDINATION

TABLE 7-3
PUBLIC HEARING COMMENTERS

Speaker	Representing
Albuquerque Hearing--March 20, 1985	
Paul Biderman	State of New Mexico, Energy & Minerals Dept.
Lillian Tenopyr	Self
John D. Schelberg	New Mexico Archeological Council
Jonathan Teague	Rio Grande Chapter, Sierra Club
David Marcus	Environmental Defense Fund
Frank Sandoval	Huerfano Chapter, Eastern Navajo Agency
Bert Mescal	Self
Steven J. Gallegos	Staff, Congressman Bill Richardson
Art Holyaw	Self
Billy Chiquito	Self
John Bunion	Self
John C. Sledd	Self
William Paul Robinson	Southwest Research & Information Center
George E. Yazzie	Huerfano Chapter
Paul Fyfe	Crownpoint Citizens Alliance
Johnson Begay	Whitehorse Lake Chapter House
Jimmie J. Thompson	Whitehorse Lake Chapter
George Whitehorse, Sr.	Whitehorse Lake Chapter
Jeff Radford	Self
Cecil Largo	Self

COMMENTS AND RESPONSES

TABLE 7-3 (continued)
PUBLIC HEARING COMMENTERS

Speaker	Representing
Albuquerque Hearing--March 20, 1985 (continued)	
Jane Veheino,	Whitehorse Lake Chapter
Austin Sandoval	Self
Leonard Tsosie	Self
Julian M. McCauley	Crownpoint Chapter
Bert Mescal	Self
Hank Saxe	Taos Environmental Association
Jonathan Teague	Self
Larry Franks	Taos Environmental Association
Bismarck Hearing--March 18, 1985	
S. Howard	Self
Garland Weidrich	Self
Albert Boeckel	Mercer County Landowners Association
John Guenther	Dunn County United Plainsmen, Dakota Resource Council
Patricia Howard	Self
Duane Sebastian	Dakota Resource Council
Billings Hearing--March 19, 1985	
Ed Hughes	Western Energy Company
Bernie Barlow	Powder River Basin Resource Council
Bob Tulley	Northern Plains Resource Council

CONSULTATION AND COORDINATION

TABLE 7-3 (concluded)
PUBLIC HEARING COMMENTERS

Speaker	Representing
Denver Hearing--March 21, 1985	
Pat Sweeney	Western Organization of Resource Councils
David Cover	American Mining Congress, National Coal Association
Salt Lake City Hearing--March 22, 1985 (No speakers)	
Washington, D.C. Hearing--March 26, 1985	
Chris Farrand	American Mining Congress, National Coal Association*
David Masselli	Western Organization of Resource Councils**

*Because these hearing comments are included in letter comment 44, neither the comments nor the responses are included in this section.

**General comments raised in this hearing testimony are responded to in the responses to hearing comments from the Dakota Resource Council (BK-10 - BK-15), the Powder River Resource Council (B-11 - B-27), and the Western Organization of Resource Councils (D-1 - D-28).

COMMENTS AND RESPONSES

ALBUQUERQUE HEARING COMMENTS

Comments from Lillian Tenopyr

COMMENT A-1: As far as reclamation is concerned, my comment is simply this: The DEIS supplement is a masterpiece of can-be, should-be, could-be, and expected-to-be generalization. Coal mining has been going on for many years. There have been reclamation efforts. But there is no detailed case history of any one effort and its results. There are two such efforts in New Mexico; on the east coast some oil television commercials point with pride to that company's reclamation program. There must be other instances of reclamation efforts. What are the findings? The DEIS needs more than old studies on reclamation potential. It needs hard data on what has been done at specific sites, for how long, how much water was used, when did watering stop if it ever started, what the postmining soil conditions were, and how they were handled, how much vegetation is now present and how much of that vegetation is regenerative. To quote last year's popular television commercial, "Where's the beef?"

RESPONSE: The soils, vegetation, and reclamation analyses in the supplemental EIS are based on results of current studies and experiences of leading authorities in the reclamation field. Procedures and practices discussed are well documented and, when properly implemented, have been shown to be reliable for making assumptions on effectiveness. Current research, resource inventories, and continuing research designed to meet specific needs will provide the information needed for specific site evaluations.

Comments from Jeff Radford

COMMENT A-2: In that case, let the DEIS speak to that issue. If the coal program is now presumably operated by people of good intentions, why does this document imply on page 132 that local people in the San Juan River Coal Region are increasingly favorably disposed to coal leasing in their area. That is not true, it is a deception, it is evidence of bad faith. The Navajo residents of the coal region consistently and resoundingly opposed additional federal coal leasing in the area.

RESPONSE: The current economic conditions in western coal regions have created some new support for more coal development. The supplemental EIS mentions that some new support exists for more coal development in the San Juan River Region but does not intend to state that many people in the region do not still oppose more coal leasing in the area.

COMMENT A-3: Again on page 201, referring to reclamation potential in the San Juan River Coal Region, the document says "Most of the region's soils have a fair to good reclamation potential" and says "the potential to reclaim and revegetate land is favorable..." That is not true, it is a deception, and it is glaring evidence of bad faith. The EMRIA studies which it refers to in the DEIS say quite the opposite.

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RESPONSE: According to the San Juan River Regional Final EIS (BLM 1984c), experience in the San Juan Basin has shown that (1) reclamation and revegetation generally apply to lands subject to coal leasing and that revegetation on lands leased for coal mining will be technologically and economically feasible and (2) the worst case is likely for only a small amount of the land that would be affected by mining.

This region has a wide range of soils, which are discussed on a general basis in this supplemental EIS. See Appendix 5, Permitting of Mining Operations, for a discussion of SMCRA requirements for permit applications and reclamation plans and for the detailed resource inventories required. Mining would not be allowed where reclamation would not be technologically feasible or potentially successful. Energy Minerals Rehabilitation Inventory and Analysis (EMRIA) studies have identified areas where reclamation would be difficult and where reclamation potential would be low.

Studies, research, and experience have found that reclamation of lands to premining conditions is possible in the arid West. Moreover, ongoing research will concentrate on specific conditions and supplement research needs.

Comments from Wm. Paul Robinson

COMMENT A-4: The EMRIA studies assess reclamation potential on yet to be mined lands, and as such, are unable to provide an "assessment of reclamation success on surface mined coal lands" as required for the DEIS, p. 2. Moreover, these studies are not optimistic about the chances for reclamation success. The USGS Circular provides information on reclamation experience, but not "current results." This is clear from the circular's Preface which states that "the report is based on 1978 observations..." by federal agency staff. Clearly, the USGS Circular does not present "current results" of reclamation success, its observations even predate the original 1979 EIS to which this document is a supplement.

Neither source assesses "current results... [of] reclamation success," and as a result, the DEIS fails to meet one of its major objectives. (p.2)

RESPONSE: See response to comment A-3.

COMMENT A-5: The DEIS asserts that "compliance with regulatory programs has strongly improved reclamation efforts and has been instrumental in achieving reclamation success," and notes that "adverse impacts to soils and their potential to produce vegetation and crops [at premining levels] . . . would be significant if erosion control, soil reconstruction, and reclamation measures are not implemented in compliance with improved plans. (DEIS, p. 355). While the DEIS asserts the existence of a "strong compliance program," it presents no information to support such a claim. Lack of supporting evidence for proper compliance with mining and reclamation laws is alarming since a 1984 study of state enforcement of the Surface Mining Control and Reclamation Act (SMCRA) showed a poor enforcement record for western coal states.

RESPONSE: The Office of Surface Mining Reclamation and Enforcement (OSM) has analyzed and discussed the assumption of full compliance with the Surface Mining Control and Reclamation Act (SMCRA). These Analyses occur in the

COMMENTS AND RESPONSES

following documents: Environmental Assessment: Cumulative Impacts of Adopting OSM's Proposed Revisions to the Permanent Program Regulations (May 3, 1982); OSM EIS-1 Supplement: Proposed Revisions to the Permanent Program Regulations Implementing Section 501(b) of the Surface Mining Control and Reclamation Act of 1977, draft (June 1982); and OSM EIS-1 Supplement, final (January 1983)(OSM 1983).

These analyses concluded that all states would make a good faith effort to enforce their regulations in accordance with SMCRA and that whenever any deficiencies occur in that enforcement, OSM, through its oversight role, would assure proper compliance with SMCRA. It follows that, if the state is enforcing SMCRA, all operators will be in compliance with SMCRA. If an operator is not in compliance with SMCRA or the implementing regulations, a notice of violation or cessation order is issued. Any impacts to the environment that occur are short term and localized in impact. These assumptions were considered reasonable, being based upon many programs controls, such as levels of funding, inspectors, and procedures for compliance.

COMMENT A-6: Thus information from the appropriate regulatory agencies indicates enforcement is below that required by SMCRA and contradicts the assertion of "strong compliance." As SMCRA compliance is [a] necessary part of reclamation success, BLM must evaluate reclamation success in the realistic setting of SMCRA compliance information and not stand on bold assertions of "strong compliance" without any supporting documentation.

RESPONSE: See response to comment A-5.

COMMENT A-7: The Final EIS should therefore include a current assessment of reclamation experience using 1984 and 1985 reports from operating mines. Performance for representative mines, including inspection reports and performance bond releases are examples of current material available to BLM through interior and state offices. Similarly, an assessment of current enforcement performance would demonstrate the actual situation with respect to the level of compliance in place at current operations.

RESPONSE: See response to comment A-5.

COMMENT A-8: As with Reclamation concerns, water issues are addressed with generalities, and with very little discussion of environmental effects on the coal regions. The use of water quality ranges, such as Table 4-16 which shows the best and worst total dissolved solids concentration for the coal areas, is an example of a useless generalization. More appropriate and valuable material would identify water quality in coal regions for specific aquifers, and the quantities of water available from those aquifers. Such information would address the water available, and at risk, from coal operations.

RESPONSE: In a programmatic EIS, the specific location of coal development within the regions is unknown. In addition, ground water quality and quantity generally have not been measured over entire regional coal fields. The draft supplemental EIS used quantity and quality data from the latest round of regional EISs as indicators for each region. Specific impacts cannot be measured for this programmatic EIS.

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COMMENT A-9: The 5,000-8,000 acre-feet per year projected for San Juan Basin coal water use is not readily available. Gallup, NM a major city in the San Juan coal region, has been trying unsuccessfully for twenty years to develop a long term water supply in this same 5,000-8,000 acre-feet per year range. The water is no more likely to materialize for the coal than it has for Gallup.

RESPONSE: The draft supplemental EIS states that water for coal development is not readily available (Page 266: "water in the region is fully appropriated"). Whether a water source should be switched from one use to another is not within the scope of this EIS, only that coal development would require a switch in water use or an outside water source. Analysis of the impacts of conversion facilities is not within the scope of this supplemental EIS (see draft supplemental EIS, page 123).

COMMENT A-10: Representation of San Juan rainfall as "annual precipitation ranges from 6 to 14 inches" is very misleading as it overestimates natural water available in the coal areas of the region. EMRIA Reports on the Bisti West (Rpt. 5-1976), Kimbeto (Rpt. 17-77) and Ojo Encino (Rpt. 19-78). Study areas show annual ranges from 3-14 inches. BLM's data indicates dryer conditions than those in the DEIS, which fails to emphasize the critical reclamation problems of arid lands with less than 10 inches per year of rainfall.

RESPONSE: Precipitation ranges reported in the draft supplemental EIS for all regions are the normal annual as it varies from place to place within a region as published by the National Weather Service. As you state in your comment, individual years vary from below normal to above normal. The BLM data given in your comment falls within the bounds of the National Weather Service normal precipitation data.

COMMENT A-11: The San Juan, Uinta-Southwestern Utah, and Green River-Hams Fork Regions are all described in this way as parts of the Colorado Basin. The environmental effects of the coal-related water uses in these regions are not addressed. The "rearrangement of water uses or importing of water from outside the regions" (DEIS, p. 266) for San Juan and other regions are major resource problems in these regions, and those familiar with the west know there is not excess water in area region to offer to the water-short San Juan or Uinta areas (more than 200,000 acre-feet/year are already been exported, without replacement from the San Juan Basin in the San Juan-Chama project). The significance of these impacts are ignored in the DEIS.

RESPONSE: See response to Comment A-9. In addition, analysis of the impacts of conversion facilities is not within the scope of this supplemental EIS.

COMMENT A-12: Water problems are clearly more important than the DEIS gives them credit for. The strong likelihood that the water "rearrangements" will both cause severe environment effects in the coal regions and determine when and where the coal is developed is high. As water is a rarer commodity in the western coal regions than the coal itself means [that] a great emphasis on the water-related issues in the Final EIS is necessary for a realistic discussion of the effects of the Coal Management Program.

RESPONSE: See responses to Comments A-9 and A-11.

COMMENTS AND RESPONSES

COMMENT A-13: The overall significance of water in the west, and the severe implications of diversion of thousands of acre-feet of water from current uses to coal-related activities is understated in the DEIS and fails to assess the relative effects of coal operations on the hydrologic system and water users in the west. A further example of the short-sightedness of the DEIS is that its coal-related water uses exclude powerplant uses, even though powerplants, often mine-mouth plants, are the dominant user of western coal, now and in the future.

RESPONSE: See responses to comments A-9 and A-11.

COMMENT A-14. The DEIS's failure to indicate the severity of the water supply problems and its role in both cost production and reclamation environmental impacts is a major weakness of the DEIS's effort to cover its NEPA responsibilities.

The Final EIS must include an assessment of the importance of water in coal production-related and reclamation-related issues addressed in the Draft. Failure to do so will leave the Department of Interior with a Coal Program EIS that does not realistically address the key resource affecting the potential for coal development.

RESPONSE: See responses to comments A-9 and A-11.

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BILLINGS HEARING COMMENTS

Comments from Ed Hughes

COMMENT-B-1: The government should have leasing policies that distinguish between new production tracts on one hand, and maintenance and bypass tracts on the other. The leasing of maintenance tracts should be included in subpart 3425--Leasing on Application.

RESPONSE: Proposed definitions for these terms were published in the Federal Register, October 31, 1984, and in the draft supplemental EIS in Appendix 6. Final definitions will be included in internal operating guidelines if the Secretary of the Interior selects the Proposed Action.

Although maintenance tracts will be identified and considered for leasing in the proposed regional leasing program, the leasing of maintenance tracts that constitute emergencies is included under 43 CFR 3425.1-4. Maintenance tracts outside designated federal coal regions may be leased under 43 CFR 3425.1-5. Chapter 2 of this final supplemental EIS reviews the discussions of the program alternatives to assure that these suggestions are addressed.

COMMENT B-2: Wherever possible, leases should be sold on a competitive basis. However, where reasonable efforts to obtain competitive bids have failed, the government should have authority to negotiate a fair price.

The Mineral Leasing Act should be amended to allow for negotiated sales in the case of captive tracts.

RESPONSE: The Department of the Interior is studying the issue of negotiated sales to develop a position to present to Congress. The Department does not have the statutory authority to conduct negotiated sales, has not determined if it will seek such authority, and has not formed a position on recent proposals that would provide limited authority for emergency bypass leasing.

COMMENT B-3: The base for calculating federal royalty payments should be the F.O.B price minus all state and local revenue and similar taxes.

RESPONSE: This comment would be more appropriately submitted to the Minerals Management Services (MMS) when that agency's new product value regulations are proposed. Under a memorandum of understanding with BLM, MMS has jurisdiction over coal product valuation for royalty accounting.

Comments from Bob Tully

COMMENT B-4: But the EIS does not consider some of the consequences of this finding. First, it is obvious that the so-called 'moratorium' on federal coal leasing has not hurt consumers, the general public, or the supply of coal, despite the complaints of the coal industry.

RESPONSE: This supplemental EIS addresses the need for a coal management program rather than the need for new leasing. The consequences of no new federal leasing are analyzed in Chapters 4 and 5.

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COMMENT B-5: Second, the reduced need for renewed leasing makes improvements in pre-sale planning achievable and practical: there is not pressure to hurry with renewed federal leasing. Under these circumstances, we think it would be appropriate to consider some of the major improvements in land use planning and data gathering for coal lease sales that have been suggested by OTA and other investigators as well as citizens' groups such as NPRC. Unfortunately, the EIS is silent on this point. But why not take the time now to do land use planning right? BLM could take a harder look at the impacts of coal leasing decisions, at the potential trade-offs, and at excluding clearly unminable areas, at the land use planning state. This EIS clearly shows that there is plenty of time, and plenty of coal, to work with.

RESPONSE: BLM is taking the time to fully develop guidance in the form of land use and competitive leasing handbooks and making a concerted effort to incorporate meaningful suggestions from outside sources, including industry towards enhancing land use planning by developing basic data standards, uniform documentation procedures, and more functional coordination measures among federal and state agencies.

Although apparent disagreements exist over the timing, amount, and adequacy of data, BLM's land use planning system is sound, and BLM is carefully examining the impacts of coal leasing as mandated by the National Environmental Policy Act, the Federal Land Policy and Management Act, and the Federal Coal Leasing Amendments Act.

COMMENT B-6: Incidentally, a little more work should have been done on the section of this EIS describing the impacts of leasing and mining on agriculture and agricultural communities. The EIS ignores the impacts of mining outside of the mining tracts themselves, such as the impacts of new transportation and transmission corridors, air pollution and water pollution from mine-mouth conversion facilities, and the host of other "offsite" impacts associated with federal coal leasing. Instead, the EIS concentrates only on those impacts of mining the coal on the surface directly over the coal, although these impacts can often be a fraction of the impacts of coal development on surrounding farms and ranches.

RESPONSE: The Department believes that program-level impacts of coal development on agriculture are adequately discussed in the draft supplemental EIS. Socioeconomic impacts are assessed in the general program-level analysis by regions, but specific impacts on agricultural communities cannot be addressed until more site-specific data exists as to where development would occur. Such assessment would occur in regional EISs. Though we recognize that several offsite impacts associated with mine-mouth conversion facilities would have great impacts on surrounding farmers, ranchers, and communities, discussion of these impacts is beyond the scope of this supplemental EIS, which does not cover the impact of new conversion facilities.

COMMENT B-7: After ignoring the impacts to landowners outside the mine itself, the EIS then concludes that most impacts will be mitigated through compensation to ranchers who lease their surface. Such compensation, of course, does not help those outside the mine boundary at all.

RESPONSE: See response to comment B-6.

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COMMENT B-8: The EIS also whitewashes the problems and uncertainties surrounding the impacts of stripmining on ground water supplies and the prospects for long-term revegetation success. After all of this, it is unsurprising that the EIS concludes that the coal leasing program will have little impact on agricultural operators.

RESPONSE: The draft supplemental EIS points out the dependence of the rural population on ground water supplies and identifies water quality degradation of shallow aquifers as a probable impact (pages 252-269). The draft supplemental EIS also states that deeper ground water can usually be developed as a replacement supply but that a deeper well would cost the agricultural operator more to maintain and operate than the original shallow well (page 260).

COMMENT B-9: The EIS is most seriously flawed in its failure to address the issue of the Department's new fee coal exchange policy. Scoping for this EIS revealed that the exchange policy was a major issue to be addressed. Yet the total discussion of fee coal exchanges in the EIS is limited one paragraph, which asserts that fee coal exchanges are not part of the coal program. It also says that BLM will allow the Regional Coal Teams to look at exchanges--a toothless power that the Coal Teams already have.

RESPONSE: The Exchanges section of Chapter 1 has been expanded in the final supplemental EIS to address your concern.

COMMENT B-10: Most recently, NPRC wrote to Assistant Secretary Griles concerning Interior's Decision Document on the scope of this EIS, which excluded impacts of the exchange policy. In a letter hand-delivered to Mr. Griles on January 8, we requested (and I quote) "that BLM respond to the specific points raised in this letter and in the scoping comments of the Western Organization of Resource Councils concerning exchanges. We believe that we are entitled to answers to the questions we have been raising regularly, without response from BLM, for more than two years."

That was over two months ago. We have received no response from Mr. Griles, and there is no discussion of any of the points we have raised in the EIS. We are therefore resubmitting those comments here today, along with copies of many of the other documents related to fee coal exchanges which we have submitted to the Department in the last three years, in one more attempt to get some kind of response.

Frankly, we cannot understand why the Department has been so utterly unresponsive to our repeated efforts to get these very serious questions addressed. We trust that the Department will respond in detail in the Final EIS.

RESPONSE: The Exchanges section of Chapter 1 has been expanded in the final supplemental EIS to address your concern.

Comments from Bernie Barlow

COMMENT B-11: The first point I would like to make is that on page 294 it is the Powder River Basin Resource Council that submitted scoping comments from Sheridan, Wyoming.

RESPONSE: This error has been corrected in the final supplemental EIS.

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COMMENT B-12: The other comment that worries me is the one on page 128 concerning Wyoming attitudes toward coal mining. BLM says "attitudes in Wyoming, where recent coal mining growth has occurred, are highly favorable toward." Sure, there are those that support development, but there are also many people who do not. The Powder River Basin Resource Council has been around for over a dozen years, representing ranchers who are very concerned with the impacts of coal development. In any case, Wyomingites want only responsible development and we want it done right.

A recent poll by the Wyoming Heritage Foundation found 16 percent of Wyoming's people were "not too" or "not at all" satisfied with reclamation of lands disturbed by energy development, 52 percent were only "somewhat satisfied." It is erroneous to portray attitudes in Wyoming as "highly favorable" toward development.

RESPONSE: The text relating to this comment has been revised.

COMMENT-B-13: The Land Use Planning program needs to be restructured. The Unsuitability Criteria should be effectively applied early in the planning process. Potential Alluvial Valley Floors and areas where surface landowners do not want leasing should be eliminated from further leasing consideration.

RESPONSE: BLM believes that its land use planning program provides the needed means of meeting its land use planning commitments under the Federal Land Policy and Management Act. BLM, however, is developing more explicit and comprehensive guidance for its line and staff employees on fulfilling the planning commitment. Alluvial valley floors and areas where a significant number of qualified surface owners do not want coal leasing are eliminated from further consideration.

COMMENT B-14: DOI's massive leasing above actual demand and needs seems to be putting tremendous pressure on the Due Diligence stipulations in the Surface Mine Control and Reclamation Act. Communities need reasonable leasing and enforcement of the due diligence provision in order to plan for development. PRBRC recommends that DOI look at and support this provision.

RESPONSE: The commenter is apparently referring to the Section 7 diligence provisions of the Federal Coal Leasing Amendments Act of 1976 (FCLAA). The Department of the Interior has no alternative but to enforce this provision of FCLAA, which requires post-FCLAA leases to provide commercial amounts of coal within 10 years of lease issuance or be terminated. Pre-FCLAA leases must meet the Section 7 diligence requirement within 10 years of the post-1976 readjustment of the lease.

COMMENT B-15: BLM must look at the impacts of their coal program on communities that are or have produced coal. Keeping mines open in these areas keeps jobs and causes less environmental impact than opening up new mines, new railroads and roads, and other associated impacts.

RESPONSE: Information on specific coal tracts and the communities that would be affected by leasing coal on them is beyond the scope of analysis of this supplemental EIS.

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COMMENT B-16: NEEDS: PRBRC has some questions that were not addressed in the Draft EIS: Q: How much coal is available no under state, federal, and private leases? Q: What coal is available that can use existing transportation systems, and coal mining, loading, and processing facilities? Q: What is the current potential production capacity of existing mines, by region, and what percentage of potential are they operating at? Q: How many coal mines in the east and outside the Powder River Basin in the West have stopped producing since 1979? Q: How many coal miners have lost their jobs in Colorado, Southwestern Wyoming, Appalachia, and other spots out of the Powder River Basin? Q: BLM should consider realistic demand, not industrial demand for leases in the program, how will this be accounted for? Further leasing can only act to the detriment of private coal owners. Q: How can DOI manage for this and mitigate these problems.

RESPONSE: The amount of coal under federal leases is published annually by BLM in the Federal Coal Management Report. Availability of coal under state and private leases is less clear because of the lack of data, but this information is not useful for this supplemental EIS. What is important is what coal could be mined in an economical and timely manner--information presented in the production capacity tables in Chapter 3. Generally these capacities would use existing transportation. Table 3-6, Capacity of Existing Operations, on page 97 of the draft supplemental EIS presents estimates of production from current mines by region, with and without more capital for expansion. The average amount of regional capacity that is mined can be calculated through the use of these numbers in combination with the regional production figures.

The number of mine closings since 1979 is not immediately obtainable. The total number of operating coal mines can be obtained from the Department of Energy, Energy Information Administration (DOE/EIA) (although the 1984 report will not be published until fall 1985). Because many mines, especially in the East, are small with short lives, production is a better measure of shifts between regions. The following table presents the 1979 and 1984 production by state.

Although Wyoming has had large production gains, these gains are not the main cause of production losses in northern Appalachia (Pennsylvania and Ohio). The heavy industry in that region, especially the steel industry, has severely declined. Restrictions on sulfur emissions have shifted coal production to central Appalachia, whose coal has much lower sulfur levels. The decline in the steel industry has also harmed Colorado production, whereas coal production in the Green River-Hams Fork Region in Colorado and Wyoming has stagnated because of competition from the Powder River Region.

BLM does consider realistic demand in its leasing program. Industry expressions of interest are only one input to regional coal team (RCT) deliberations. Further federal coal leasing will hurt some private coal owners and help others. Private coal associated with the leased federal coal will be helped. The market will ultimately determine who gains or loses. Much federal coal is leased but not developed, often because it is not competitive. RCTs will consider the market to try to avoid either restricting or flooding it. RCTs will also consider regional impacts of production from alternative sites.

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REGIONAL COAL PRODUCTION CHANGE, 1979-1984

State/region	1979	1984	Change
Appalachia	425.4	441.2	15.8
Alabama	24.2	26.3	2.1
Georgia	0.0	0.1	0.1
Kentucky, East	104.1	123.5	19.4
Maryland	2.6	4.3	1.7
Ohio	43.5	40.5	-3.0
Pennsylvania	93.3	72.3	-21.0
Tennessee	8.7	7.7	-1.0
Virginia	36.8	35.5	-1.3
West Virginia	112.2	130.9	18.7
Interior	169.8	195.2	25.4
Arkansas	0.2	0.2	0.0
Illinois	59.6	63.9	4.3
Indiana	27.5	37.4	9.9
Iowa	0.6	0.5	-0.1
Kansas	0.8	0.8	0.0
Kentucky, West	42.5	41.2	-1.3
Missouri	6.4	4.8	-1.6
Oklahoma	5.0	5.4	0.4
Texas	27.2	41.2	14.0
Western	182.7	253.7	71.0
Alaska	0.8	0.9	0.1
Arizona	11.4	11.7	0.3
Colorado	18.5	17.6	-0.9
Montana	32.7	33.1	0.4
New Mexico	15.6	21.3	5.7
North Dakota	15.1	22.1	7.0
Utah	12.0	12.3	0.3
Washington	5.1	3.9	-1.2
Wyoming	71.5	130.9	59.4

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COMMENT B-17: COAL PROGRAM MANAGEMENT: Q: How much is it costing the public and the federal government to carry out the coal program, and how much revenue has the new program brought in?

RESPONSE: The coal program, as currently constituted, dates back to 1979. Appropriations and revenues since 1979 are shown in the following table.

	<u>FY79</u>	<u>FY80</u>	<u>FY81</u>	<u>FY82^a</u>	<u>FY83</u>	<u>FY84</u>
Appropriations (\$000s):	21,112	22,380 ^c	29,300	17,907 ^b	20,259 ^{bd}	18,600 ^b
Revenues (\$000s):	17,079	25,134	66,431	138,600	82,908	67,565
(Bonus bids) ^e :	960	565	26,151	77,538	26,242	9,768
(Royalties) ^e :	16,119	24,569	40,280	61,062	56,666	57,797

Source: BLM Budget Justifications FY79-FY85.

^aFor fiscal year 1982 and beyond, all overhead costs were included in a new General Administration appropriation request.

^bNot comparable to pre-fiscal year 1981 appropriations because of changes in the accounting method.

^cIncludes Supplemental \$1.8 million.

^dIncludes Minerals Management Service (MMS) transfers of \$4,293,000.

^eFY1984 Federal Coal Management Report - Department of the Interior.

COMMENT B-18: COAL EXCHANGE PROGRAM: The Draft EIS does not address the social and environmental problems evidenced by BLM's coal exchange program. BLM must promulgate regulations to cover this important coal leasing area, and should look at the impacts in the Final EIS. The intent of the Wallop amendment and the coal exchange program was to provide exchange of coal lands of legitimate landowners that were taken by federal actions. This was not intended to allow rail companies to consolidate their holdings, or for large energy companies to file for leases under I-90 after the interstate was built. This program needs to be completely revamped. Specific EISs should be prepared, and rulemaking should be undertaken.

RESPONSE: Regulations covering fee title exchanges, including those involving fee title exchanges of coal ownership, appear in 43 CFR 2200. Regulations covering coal lease exchanges appear in 43 CFR 3435. Regulations covering alluvial valley floor coal lease and fee title exchanges appear in 43 CFR 3436.

Fee title exchanges of coal ownership are not part of the federal coal leasing program and are not analyzed in the supplemental EIS. Coal lease exchanges must be authorized by specific enabling statutes, the particulars of which vary greatly from statute to statute. Generally, however, all fee title exchanges must meet the public interest test of Section 206 of the Federal Land Policy and Management Act. Coal lease exchanges must also be in the public interest as required by 43 CFR 3425.2(c).

COMMENT B-19: NON-COMPETITIVE LEASING: Q: What are the costs of processing and administering the various maintenance leases, exchanges, and emergency leases; how does this compare to revenue obtained from competitive leasing of the coal? There seems to be a tendency for companies to lock up federal coal in competitive leasing that is obtained later at lower cost with

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exchanges or emergency and maintenance leases. Q: What is the urgent need for the above mentioned transactions? Q: What are the impacts of trying to justify the above mentioned transactions TIME AFTER TIME with mere EAs? Q: How many of the non-competitive lease transactions have been approved with EAs, and how much land and coal was affected? How many had no environmental review?

RESPONSE: This comment confuses noncompetitive and competitive coal leasing. Of the types of leasing actions mentioned, only exchanges constitute noncompetitive leasing. Emergency leasing, including the leasing of maintenance tracts, is competitive leasing. Administrative costs of bringing emergency coal tracts to lease average \$30,000 per tract. Bonuses generated from the sales of these tracts ranged from \$5000 to \$150,000. Administrative costs of bringing coal tracts to sale in regional lease sales have ranged from \$30,000 to \$128,000 per tract. The bonuses paid range from \$975 to \$21,901,175. Most leasing revenues come from royalties paid from producing leases.

Exchanges involving coal are essentially of two kinds: (1) lease exchanges specifically authorized by law or (2) fee title exchanges authorized by criteria in Section 206 of the Federal Land Policy and Management Act. Some laws authorizing coal lease exchanges set deadlines by which exchange actions must be considered. Private proponents of exchanges involving coal want their proposals treated quickly and often complain that the Department of the Interior proceeds much too slowly in processing exchanges.

All exchanges became subject to environmental review as of January 1, 1970, the effective date of the National Environmental Policy Act. No exchanges have been undertaken since without an analysis of the potential environmental impacts of the proposals. Exchanges require EISs only when they are found to constitute major federal actions that would significantly affect the quality of the human environment.

The comment assumes that all exchanges involve giving up one federal coal lease for another and that coal will eventually be mined on both the land or lease given up and on the land or lease obtained. The comment also assumes that all exchange proposals are granted. Some of these assumptions are incorrect. See Table 1-4 in this supplemental EIS.

In the case of the Bisti and Cranberry exchanges, for example, two wilderness areas were created. The parties seeking exchanges under the laws creating the wilderness areas had interests that they could not exercise. The Bisti exchange proponent obtained two leases outside of the wilderness area; the Cranberry exchange proponent received monetary compensation. The Federal Government decided that these lands were better suited for wilderness than for coal mining, and the companies with interests in these lands were compensated in the interests of equity and the law.

COMMENT B-20: SOCIAL AND ECONOMIC IMPACTS: Q: What specific mitigation proposals will DOI come up with to meet problems like the Sheridan Syndrome in which mining takes place in one state with revenue going to that state, and a community like Sheridan having to deal with all of the impacts? BLM should develop a tax/revenue sharing system to help us out [sic] the impacted communities. Q: Since ample areas have already been developed for coal mining, why not leave the undeveloped areas (e.g. Buffalo, Tongue River) alone?

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RESPONSE: If the Secretary of the Interior selects a regional coal leasing program, impacts such as those cited would be considered on a regional or application basis through such forums as the regional coal teams (RCTs). The RCTs could consider leasing thresholds that could reduce such impacts. BLM, however, has no authority to establish a revenue system to economically assist in these cases. Any economic assistance must be considered by state and local governments. The state governors, who are active participants in any federal coal leasing program, are the proper forum to consider impact assistance in these cases.

COMMENT B-21: Q: The offsite impacts of population increase and commensurate pressures need to be accounted for in detail. For example, hunting pressures, demand for water development, inability of people to plan land improvements because they may lose their property to a dam, a railroad, or other impacts related to coal development.

RESPONSE: Information on specific coal tracts and how communities would be affected by coal leasing on them is beyond the scope of analysis of this supplemental EIS. Future site-specific EISs will address these types of environmental impacts at the community level.

COMMENT B-22: Q: What impacts does the coal leasing program have on multiple use land use in coal producing regions?

RESPONSE: Coal leasing is a product of land use planning; land use planning drives the coal leasing process by determining which lands will be further considered for coal leasing. During land use planning, resources and resources uses (grazing, recreation, timbering) are analyzed. When uses conflict, efforts are made to resolve these conflicts by applying mitigation. Where mitigation is unsuccessful, one use is favored to the exclusion of others.

COMMENT B-23: Q: Because of the federal and industrial induced hype for energy development, many communities in the west overbuilt for energy development and are consequently in a depressed economic "bust" now. How will DOI avoid this type of problem in the future?

RESPONSE: The "overbuilding for energy development" was not a product of the federal coal leasing program implemented in 1979 but originated more as a result of a common perception of the energy crisis that developed in the early 1970s. The Department of the Interior cannot be assured that energy crises will not occur in the future. The United States, however, has taken steps that may cushion sudden changes in the nation's energy picture, such as creation of the Strategic Petroleum Reserve. These steps, along with a well-conceived leasing program, can help stabilize the western coal industry and help avoid a recurrence of the western coal boom. Certainly, experience gained by all parties will be invaluable in the future.

COMMENT B-24: Q How does DOI plan to minimize and mitigate for this serious social impact?

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RESPONSE: The Department of the Interior recognizes that such impacts occur whenever economic activity such as mining escalates at a rapid rate. These impacts occur regardless of mineral ownership and are a function more of the permitting authorities than of the lessor. Because this problem can be resolved only by local authorities, the Department encourages the public to make their views known to the specific regional coal team involved and to work with their county and state agencies and other governmental bodies who have the authority to regulate development and the distribution of impact funds. Also see the response to comment 50-7.

COMMENT-B-25: Q: Why are AVF studies not done, or if done, why aren't they used to eliminate coal leasing areas?

RESPONSE: Unsuitability criterion 19, Alluvial Valley Floors (AVFs), is applied during land use planning. In some planning efforts, a preliminary decision is made to eliminate what is obviously an AVF, and this decision is then followed up by a later decision that affirms the final resolution of this criterion. By regulation, this particular criterion can be applied as late in the process as the review of the mine permit. The difficulty most often found during land use planning is the lack of data for clearly identifying AVF boundaries. This difficulty delays the final resolution of this criterion.

COMMENT-B-26: Q: Why are denials of surface owner's consent to mine not used early in land use planning to eliminate coal lands from leasing consideration.

RESPONSE: The Surface Mining Control and Reclamation Act (SMCRA) requires BLM to consult with qualified surface owners early in the land use planning process. If a significant number of qualified surface owners express a preference against leasing, the Department of the Interior has the policy of excluding these areas from further consideration for the current round of coal leasing.

The consent of qualified surface owners, required by Section 714 of SMCRA, is also used to help determine which coal lands will be considered for leasing. Consent, however, is usually an option that the qualified surface owner retains until later in the activity planning process. The owner cannot be required to give early consent for land use planning purposes. Therefore, the consent requirements of Section 714 of SMCRA are not of great utility in land use planning.

COMMENT B-27: Q: DOI has been doing a poor job of planning in its coal program - as evidenced by the overcapacity in the Powder River Basin. How can this be avoided in the future?

RESPONSE: Overcapacity in the Powder River Basin is a situation created by a complex set of events, most of which were not controllable by the Department of the Interior. Most of the disparity can be linked to a complex set of national and international events that rendered the long-term estimates of demand for coal inaccurate. To lessen the possibility of a reoccurrence, such estimates will now be made for long-term, middle-term, and near-term periods and be region specific as well as national. All will be provided to each regional coal team, which may also request specific runs to suit its needs. All major decisions will be preceded by a timely update.

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COMMENT B-28: Q: What are the realistic probabilities of reclamation success?

RESPONSE: The results of studies, research, and experiences reveal that current reclamation objectives can be met when the reclamation effort is designed on the basis of site-specific need and when existing technology is used (Narten and others 1983).

COMMENT B-29: It is commonly admitted that surface mining destroys shallow aquifers and water returning to the spoil areas will be of very poor quality--much poorer than domestic quality. How much ground water are we sacrificing?

RESPONSE: Mining does remove an aquifer-forming material in many areas, but studies show that the replaced overburden at first act similarly to the aquifer-forming material in water yielding characteristics. Studies also show that water returning to the spoils would be degraded in quality compared to water in the premining aquifer. (See draft supplemental EIS, pages 259-269.) This programmatic supplemental EIS identifies no specific areas of coal mining, and thus ground water impacts cannot be measured.

COMMENT B-30: How will the coal program affect surface water quality and quantity?

RESPONSE: The impact of the coal program and coal mining on surface water quality and quantity is described in the draft supplemental EIS on pages 259-269.

COMMENT B-31: Q Are the unsuitability criteria being adequately applied under current land use planning and later in the process?

RESPONSE: BLM acknowledges that consistent guidelines and procedures have been lacking for field personnel responsible for land use planning for coal. Recently, the BLM planning office has issued manual guidance for the coal program. In conjunction with this guidance, a handbook is being prepared to give field personnel a detailed reference to the data standards and guidelines of the program. This document will become final after extensive coordination with affected parties and not until the Secretary of the Interior has determined the final form of a new federal coal management program.

COMMENT B-32: Q: What are the proposed coal processing technologies being envisioned, and what are their impacts? (e.g. coal washing, coal enhancement, synfuels, in-situ underground coal conversion, etc..)

RESPONSE: Because the supplemental EIS does not involve analyses of leasing specific amounts of coal or of leasing specific tracts, the appropriate coal processing technologies would not be known, and their associated impacts would not be assessed until more site-specific stages of National Environmental Policy Act compliance.

COMMENT B-33: What are the coal transportation demands and impacts, and how can they be avoided and mitigated? (i.e. railroads, coal slurry, electrical lines, etc..)

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RESPONSE: The coal transportation demands and impacts are directly related to the production forecasts. The railroad industry will expand line capacity and add to or upgrade existing lines to avoid and mitigate impacts to railroads (see page 159 of the draft supplemental EIS). Impacts associated with coal slurry lines are discussed on page 160 of the draft supplemental EIS. Impacts associated with electrical lines are not within the scope of this supplemental EIS but will be covered by the regional and site-specific EISs.

COMMENT B-34: Since the AVFs occupy only a small percentage of the total coal lands, why doesn't DOI have a policy to prevent leasing or mining of AVF lands?

RESPONSE: The Department of the Interior has such a policy, based on Section 510(b)(5) of the Surface Mining Control and Reclamation Act of 1977 (SMCRA). If the state regulatory authority or the Office of Surface Mining Reclamation and Enforcement (OSM) determines that the land is an alluvial valley floor (AVF) and if the potential operator meets the other criteria, the AVF cannot be mined. Although an area eventually determined to be an AVF may be leased, the final AVF determination is made during review of the permit application package by OSM or the state regulatory authority. The Department may protect AVFs by denying mining permits in accordance with AVF statutory provisions.

COMMENT B-35: Q: How effective has reclamation been at preserving an AVF's essential hydrologic function?

RESPONSE: This is a technical issue that should be addressed by the regulatory authority that governs surface coal mining in each state. For further information on this subject, see Appendix 5, Reclamation and Erosion Control on Surface-Mined Lands.

COMMENT B-36: What does DOI propose to do to protect AVFs?

RESPONSE: See response to comment B-34.

COMMENT B-37: PRLAs: Q: What will be the environmental impacts of PRLA issuance? Q: PRBRC is aware that past-Secretary Watt claimed surface owner consent does not apply to PRLAs. Powder River disagrees and believes consent must apply to PRLAs. This determination should be reassessed by Secretary Hodel. What are all of the protections available to surface owners affected by PRLAs? Q: What would be the impact of DOI's determination that surface owner consent does not apply to PRLAs carried out?

RESPONSE: The environmental impacts of issuing coal preference right leases from the existing coal PRLAs have been or will be studied, mainly in EISs.

The Department of the Interior's determination that the surface owner consent provisions of Section 714 of the Surface Mining Control and Reclamation Act of 1977 (SMCRA) do not apply to PRLAs was included in the federal coal management rules issued in 1979 (43 CFR 3430.0-7). SMCRA exempts valid rights existing on the date of its enactment, and all coal PRLAs existed on that date.

Surface owners affected by coal preference right leases are eligible for compensation for damages to their crops and surface improvements under the terms of the laws that reserved the coal to the United States when the land

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was sold into private ownership. Many such laws exist, and concerned individuals should examine the patents for their lands to determine the relevant law and the compensation due them.

The costs of compensation to surface owners living on lands encumbered by coal PRLAs are part of each applicant's final showing. If a preference right lease applicant cannot show the existence of coal in commercial quantities, then no coal lease will be issued. Where commercial quantities of coal have been proven, a lease can be issued with mitigating measures to alleviate, prevent, or compensate for surface impacts.

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BISMARCK HEARINGS COMMENTS

Comments from S. Howard

COMMENT BK-1: I find the Bureau of Land Management has not been specific enough on the quantities of water that would be diverted to the coal program.

RESPONSE: The amounts of water estimated for use by coal mines and coal-related populations are presented in Table 4-17 of the draft supplemental EIS. These figures are generalized by region because at this level of analysis specific locations of coal development are unknown. Water use by powerplant facilities is not analyzed in the draft supplemental EIS (see page 123).

Comments from Garland Weidrich

COMMENT BK-2: This EIS does not address the uncertainty, the direct impact of federal leasing decisions which are made long before the first shovel of dirt is pushed for development decisions.

RESPONSE: The supplemental EIS does not analyze the leasing of specific amounts of coal or the leasing of specific sites (draft supplemental EIS, Chapter 4, Scope of Analysis, page 121) and therefore does not address the uncertainty associated with federal leasing decisions.

COMMENT BK-3: The impacts of the federal coal leasing decision in these areas is felt in many farm and community expansion decisions. This shouldn't be overlooked in the EIS.

RESPONSE: Information on specific coal tracts and communities that would be affected by leasing coal on them is beyond the scope of analysis of this supplemental EIS.

COMMENT BK-4: If leasing by application occurs in the Fort Union region, even if regional sales continue to be held in other areas, then this should be done with the following added steps:

- 1 - Allow the regional coal team to review any lease by application.
- 2 - Allow the regional coal team to review all land use plans for data adequacy. This should be done before any federal coal is leased anyway.
- 3 - Allow the regional coal team to review any resource management conflict with each land use plan and any lease by application, and to propose solutions to these conflicts

RESPONSE: BK-4 The type of leasing in Fort Union cannot be addressed until the Secretary of the Interior makes a program decision. The responsibilities of individual regional coal teams, if they continue to exist, would be addressed in the charters developed by the regional coal teams. We expect that these suggestions will be considered during that process.

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Comments from Albert Boeckel

COMMENT BK-5: The environmental impact statement (page 197) states, "The potential to reclaim land to a near original state following surface mining is favorable with proper use of effective erosion control, reclamation, and revegetation measures." The source of this statement is the 1982 Fort Union Coal Regional EIS. This assumes that proper inspection and enforcement are being done to ensure that there is effective erosion control.

The Office of Surface Mining noted in its annual oversight report of North Dakota's reclamation enforcement (1984) that the Public Service Commission did not consistently cite all violations, nor did they properly document their inspection reports. The EIS can't assume that effective reclamation is taking place when enforcement problems exist.

RESPONSE: See response to comment A-5.

COMMENT BK-6: Mercer County Landowners Association recommends that Department of the Interior make a more adequate assessment of reclamation potential in the Fort Union region and address this area much more completely in the final environmental impact statement.

RESPONSE: See Appendix 5, Permitting of Mining Operations, which discusses the requirements of the Surface Mining Control and Reclamation Act (SMCRA) for resource inventories of the permit area. This detailed resource information provides the basis for determining postmining land use and reclamation success and for developing the operation and reclamation plan.

COMMENT BK-7: In the comments of the Western Organization of Resource Councils at the October 1984 scoping hearing for the 1985 environmental impact statement, it was suggested that Interior consider reclamation as an unsuitability criterion for land use plans. This was again suggested at a meeting between BLM officials and interested groups held in December 1984. It is stressed again here.

Because strip mining is the only economical way of extracting coal in the Fort Union region, it is logical to assume that those lands that do not have a good potential to be reclaimed be excluded from leasing and, consequently, mining. If land does not have a good potential for reclamation, no amount of regulatory or enforcement activity will improve the chances of reclamation.

RESPONSE BK-7: See response to Unsuitability Review comment 12-6 in Appendix 1.

COMMENT BK-8: Concerning air quality, the Fort Union region is unique in that if there is a strip mine, then there will probably be a coal conversion facility nearby. Because of this situation, the pollution from a coal conversion facility must be taken into consideration when determining impacts on air quality. It is not acceptable to avoid a determination of air quality impacts merely because it is unknown where federal coal will be developed.

RESPONSE: The EIS is a programmatic supplement to assess the national impacts of four federal coal management program alternatives. The scope of this supplement is limited to analyzing program-level impacts.

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The impact analysis addresses the following cycles of coal development: exploration and mine development, surface and subsurface extraction and beneficiation, and transportation. The analysis in this supplemental EIS does not cover the impact of conversion facilities because development of new conversion facilities cannot be shown to depend on new federal coal leasing at the programmatic level. Where conversion facilities are proposed for leasing or mining of federal coal, the building of such facilities will require compliance with the National Environmental Policy Act. One observation, however, can be made: because this supplemental EIS projects coal production to be less than that projected by the 1979 FES (BLM 1979a), fewer impacts would result from the fewer conversions that might occur. Moreover, the revised annual coal production estimates (Table 3-7) for the Fort Union Region at all production levels and in all target years shows the same production for the No New Federal Leasing Alternative as for the Proposed Action. Therefore, no pollution from powerplants would be attributable to the Proposed Action.

Regional EISs and later site-specific analyses of individual tracts will evaluate potential impacts of leasing. The location and type of new facilities are better addressed at a later review and decision point in site-specific or regional analyses when more specific data exists.

For a complete discussion of the scope of analysis, see Chapter 4, Scope of the Analysis and Analytical Approach.

COMMENT BK-9: The 1985 EIS did not address the Environmental Protection Agency's proposed rules concerning listing new surface mines as a major new source of pollution. On page 188 the EIS states, "The impacts on air quality would be greatest at the mine site where airborne particulates would be generated and at areas close to the mine site. Air quality impacts of mining would markedly decrease with distance from the site." A Federal Register notice on October 26, 1984, page 43212, noted, "EPA has concluded on the basis of various studies that surface coal mines do pose a threat of significant air quality degradation.."

Mercer County Landowners Association suggests to Interior that in the final environmental impact statement this issue be addressed and its impacts on the federal coal program and the areas affected by such a ruling be assessed.

RESPONSE: EPA has proposed rules but has not issued final regulations. Until any regulations have been issued a discussion of possible rules is premature and outside the scope of a programmatic supplemental EIS.

Comments from John Guenther

COMMENT BK-10: First, there is the issue regarding the success of reclamation as it relates to ground water. The supplemental EIS states that surface water could be expected to return to its premining quality, but this may not occur with ground water. In a study completed by Groenewold and others (1983) it was noted that redistribution of overburden and topsoil can lead to increased mineralization of ground water.

The soils and overburden throughout the western half of North Dakota are basically the same with the exception of varying amounts of different minerals. Thus, it is possible that increased mineralization of ground water could take place wherever mining is occurring.

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RESPONSE: BLM agrees that increased mineralization of ground water would result from further coal mining. The draft supplemental EIS (pages 259-269) discusses this impact for all coal regions.

COMMENT BK-11: Studies concerning reclamation are not long term, nor has there been enough time elapsed to determine whether reclamation is successful. At best, the potential to restore ground water is uncertain. Interior does not seem to have any insight as to whether ground water can be effectively restored.

RESPONSE: Impacts to ground water and the potential for ground water to be effectively restored are discussed on pages 259-269 of the draft supplemental EIS. Short-term impacts were projected from data collected by the referenced researchers. The long-term impacts are, of necessity, projections based on the geochemical processes identified by the researchers and professional judgment. The degree of this impact would greatly vary within and among regions.

COMMENT BK-12: The EIS on page 260 states that state and federal law require that mine operators provide a replacement water supply. This statement should be clarified to say that if the landowner can prove his water supply is being affected by mining, then he will be provided with an adequate water supply. If he can't prove as such, he won't be given a water supply. There have been a number of instances in North Dakota where the farmer or rancher both on and immediately off the mine site have had to fight and prove that their water supply has been damaged. After the farmer had proven his case, then the Public Service Commission took action. It should not be assumed that because there are laws requiring replacement of water supply that this supply will be given automatically.

RESPONSE: Enforcement of state and federal coal regulations is not within the scope of this supplemental EIS.

COMMENT BK-13: A second area the EIS should have addressed concerning the Fort Union region was the effect on ground water from the wastes from coal conversion plants. Because of the nature of the coal in North Dakota, there must be a coal conversion facility near the mine. Therefore, the impacts on ground water come not only from the mine itself but also from the accompanying facility.

RESPONSE: Analysis of the impacts of conversion facilities is not within the scope of this supplemental EIS. Moreover, the revised annual coal production estimates (Table 3-7) for the Fort Union Region at all production levels and for all target years show the same coal production under the Proposed Action and No New Federal Leasing. Therefore, no impacts to ground water from wastes from coal conversion plants would be attributable to the Proposed Action.

COMMENT BK-14: In "Ground water" (December, 1984) it was noted that one of the major wastes of a synthetic fuels plant is fly ash. The fly ash is somewhat soluble in water and, thus, can contaminate surrounding ground water. The ash contains minerals such as arsenic and selenium, both of which are potentially harmful to humans.

RESPONSE: See response to comment BK-13.

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COMMENT BK-15: Because of the need for mine-mouth facilities in North Dakota, an assessment of how much surface water would be needed in the operation of such facilities should have been more adequately addressed. Even though areas of leasing have not been determined at this time, estimates based on previous facilities could have been performed. Perhaps then Interior could have a better idea of what impact new federal leasing would have on ground water.

RESPONSE: See response to comment BK-13.

Comments from Patricia Howard

COMMENT BK-16: The EIS states on page 123 that, "The analysis in this supplemental EIS does not cover the impact of conversion facilities because development of new conversion facilities cannot be shown to depend on new federal coal leasing at the programmatic level." In the Fort Union region, and especially North Dakota, the only economical way to use lignite is to have a mine-mouth facility.

RESPONSE: See responses to comments BK-8 and BK-9.

COMMENT BK-17: The boom-bust cycle of energy development should have been addressed in this EIS.

RESPONSE: The boom-bust cycle of energy development is not within the scope of this supplemental EIS.

COMMENT BK-18: In Dunn County there is a significant amount of federal coal under the surface. The only company who will bid on this coal will presumably be the Nokota Company, in which case they will construct a mine and a coal conversion facility. This is what company officials have been proposing all along.

I ask the Interior to address at least the possibility of new coal conversion facilities where federal coal is leased. In this way, socioeconomic impacts could be judged more accurately for the Fort Union region.

RESPONSE: See response to comment BK-8 for the scoping rationale for not including coal conversion facilities in the analysis. Impacts of new coal conversion facilities where federal coal is proposed for leasing will be addressed in regional coal EISs.

COMMENT BK-19: Furthermore, this EIS neglected to mention the impacts on county and state roads. Some roads may need to be paved, and all roads will need to be kept in good condition. The heavy vehicles used by mine operations create a great deal of strain on paved and gravel roads.

RESPONSE: The impact to transportation systems of necessity had to be covered generically at the program level. Because the actual location of coal leases are not known, specific impacts such as the commenter mentions cannot be determined. These types of impacts would be covered in the regional and site-specific EISs.

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COMMENT BK-20: This EIS's treatment of socioeconomic impacts from federal coal leasing should be more comprehensive. Also, in the Fort Union region, mine-mouth facilities are a fact of coal leasing in North Dakota and, therefore, even if Interior does not know where federal coal will be leased, the impacts from both a mine and a coal conversion plant must be taken into consideration when assessing impacts.

RESPONSE: A more comprehensive analysis, including the impacts of mine-mouth facilities, is beyond the scope of this supplemental EIS. Future site-specific EISs will address impacts in more detail.

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DENVER HEARING COMMENTS

Comments from Western Organization of Resource Councils

COMMENT D-1: Clearly, then, a program of fee coal exchanges to consolidate checkerboard ownership patterns is a new program, implementing a new policy, neither of which was even considered in the 1979 coal program EIS. It is a policy that affects some 30 billion tons of coal in checkerboard areas alone. Practically speaking, there are 30 billion tons of coal for which BLM proposes to adopt an entirely new management program and which may be leased and mined as a direct result. An EIS is necessary to assess the impacts of this new program.

RESPONSE: The exchange of fee coal is not a federal program requiring a programmatic EIS. All such past and present exchange proposals have been initiated by nonfederal parties. The Department of the Interior does not intend to propose or solicit fee coal exchanges in the future. Past and proposed guidance in Appendix 9 is designed to aid the public and BLM in processing proposals as they are filed by the nonfederal sector.

COMMENT D-2: For reasons similar to those just discussed, BLM would benefit from a formal rulemaking process for adoption of an exchange policy, rather than the issuance of an internal policy as is currently planned. Formal rulemaking would also have the advantage of allowing citizens the ability to compel the Bureau to follow the policy once it is adopted. In the past--again, the Meridian exchange is an example--guidelines, policies, and formal decisions of the State Director have not been followed in evaluating and carrying out proposed exchanges.

RESPONSE: The draft rulemaking in Appendix 9 would adopt policy and procedures specific to fee coal exchanges. The draft policy (Appendix 9) would be supplemental to the draft rulemaking.

COMMENT D-3: The most volatile issue related to fee coal exchanges in checkerboard areas, without question, is whether such exchanges should be completed between BLM and common carrier railroads. The coal industry and many public interest groups content that such exchanges violate section 2(c) of the Mineral Leasing Act of 1920.

Section 2(c) prohibits any company owning or operating a common carrier railroad from acquiring a federal coal lease. One of the issues presented to BLM by every exchange proposal with a land grant or common carrier railroad or affiliated company is whether an exchange would violate section 2(c). BLM argues narrowly that exchanges are not affected by the provisions of section 2(c).

To focus on the question of whether or not there may be some technical escape from the need to apply section 2(c) to exchanges with railroads is to beg the issue. The intent of Congress in passing section 2(c) is clear--Congress wanted to separate, insofar as possible, the mining from the transportation of coal. It is therefore against the public interest expressed by Congress and a violation of the Department's public trust to allow railroads to gain control of a block of federal coal where no such control existed previously--to exchange coal with railroads in checkerboard coal areas.

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We recognize the Department's position against section 2(c), but it is still the law, and it is the expression of the Congress' current view of the public interest. It's intent should be considered in determining whether or not exchanges are in the public interest.

RESPONSE: A Federal District Court in Wyoming has recently upheld the Department of the Interior's position that Section 2(c) applies only to federal coal leases.

COMMENT D-4: At the very least, the Department must provide for an open public debate, either through a programmatic environmental impact statement or formal rulemaking, on the merits and demerits of exchanges with common carrier and land grant railroads. Until the recent exchanges considered by BLM, the Interior Department had refused to consider such exchanges, and such exchanges were not mentioned, let alone evaluated, in the 1979 programmatic EIS. Now, the Department has changed its policy, without any public debate.

RESPONSE: The draft rulemaking in Appendix 9 would provide for a public meeting on all aspects of all fee coal exchange proposals and/or antitrust review by the Department of Justice. The Department of the Interior has not refused to consider fee coal exchanges since passage of Section 4 of the Act of October 30, 1978 (92 Stat. 2074), which authorized such transactions under Section 206 of the Federal Land Policy and Management Act. Department policy has not changed since 1978. Fee coal exchange proposals could and have been considered on a case-by-case basis as can all other types of fee exchange proposals.

COMMENT D-5: BLM's decision to exclude fee coal exchange issues from the EIS Supplement is erroneous, arbitrary, and displays bad faith on the part of the Department. The explanation of this decision in the scoping decision document on the EIS Supplement (Appendix 6, pp. 405-407) is feeble, and ignores all of the extensive comments and arguments we have made on this subject.

RESPONSE: The final supplemental EIS has been expanded to respond to the extensive comments and arguments received on this issue (see Chapter 1).

COMMENT D-6: The decision does appear to be consistent with the Department's attempt to bury all issues related to fee coal exchanges in its federal coal program review, and to prevent public comment on those issues insofar as that is possible. According to the September, 1984 Coal Program Implementation Plan, DOI was scheduled to have completed, on or before the end of 1984, a review of the Exchange Manual, issuance of a revised exchange manual, a fee exchange policy instruction memorandum, and a staff draft concerning Justice Department review of exchanges, all without any scheduled public review. (We have received staff drafts of regulations regarding Justice Department review of exchanges; it is not clear whether or not this is the same as the last item in the September implementation plan.)

To date, we have not been provided with any of these documents (with the possible exception just noted). BLM's decision to prevent these issues from being discussed in comment on the EIS is unfair and unwise. BLM even failed to include any of these documents in Appendix 6 of this SEIS. The Fee Coal

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Exchange Policy was not even included. Among other things, this prevents discussion of such programmatic issues as the relationship of the fee coal exchange policy to the cooperative leasing proposal on which the SEIS solicits comment.

RESPONSE: The land exchange manual was reviewed and issued in August 1984. A copy is included in Appendix 9. The draft revision to the September 26, 1983, policy statement in Appendix 9 will be made part of the manual when approved. Draft rulemaking for Department of Justice review of all fee coal exchanges is also found in the Appendix 9. The policy statement would require the cooperative leasing alternative to be fully considered as part of the public interest determination for an exchange proposal.

COMMENT D-7: "A. The BLM considers coal exchanges on a case by case basis in response to proposals from private fee coal owners."

BLM seems to place a great emphasis on the fact that it considers fee exchanges on a "case by case" basis and at the behest of private parties. It is not clear what differentiates this from coal leases which are also approved or denied on a case by case basis and which bear at least as much resemblance to the privately submitted expressions of interest as final fee exchanges do to initial proposals submitted by the private fee owner. It is noteworthy that the Supplemental EIS will consider the environmental impacts of an alternative which is leasing by application--coal leases processed on a case by case basis in response to proposals from would-be lessees.

RESPONSE: Coal leasing procedures differ from fee coal exchanges in that the Department of the Interior has an established federal coal leasing program in which the Department actively considers leasing on its own initiative. No such Departmental fee exchange program exists, and none is proposed. The Department will merely consider a fee coal exchange proposal that is filed by the nonfederal sector as it would consider any other type of fee exchange proposal.

COMMENT D-8: This statement also disguises the fact that significant issues related to exactly what "private fee coal owners" may propose exchanges need to be resolved, as OTA noted and as BLM is well aware. These include whether common carrier railroads may benefit from fee coal exchanges with the federal government. If this is not a programmatic issue which would benefit from EIS review, what is? Obviously, the inclusion in the coal development base of checkerboarded lands which are currently unlikely to see any development absent exchanges has an impact.

RESPONSE: This comment is related to Section 2(c) of the Mineral Leasing Act of 1920. The issue is the subject of litigation in the federal courts. A Federal Court in Wyoming has recently upheld the Department of the Interior's position that Section 2(c) applies only to federal coal leases. Cooperative leasing is one alternative to fee exchange that could bring about development in the checkerboard areas. It is an alternative that would be required to be considered by the draft policy before a public interest determination for an exchange proposal could be made.

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COMMENT D-9: "B. There are some instances where BLM field officials may also identify coal land areas during land use planning as having fee coal exchange potential."

This is a ridiculous statement. The fact is that there are no areas that are found suitable for land use planning which are not also found suitable for exchange. In other words, in all instances, "BLM officials identify coal land areas as having fee coal exchange potential."

In fact, whether initiated by the private fee coal owner or not, any fee coal exchanged must be found suitable for exchange in a land use plan under the provisions of section 206 of FLPMA under BLM's own exchange regulations (at 43 CFR 2200). BLM has explicitly found all coal suitable for further consideration for leasing as suitable for exchange in all recent land use plans, and has found that all coal suitable for leasing is suitable for exchange implicitly in all other land use plans.

RESPONSE: Land use plans do not find coal as suitable for exchange. They merely identify areas in which federal coal could be considered for exchange. The land exchange process in BLM Handbook H-2200-1 (see Appendix 9) contains the procedures through which public lands are found suitable for exchange.

COMMENT D-10: "C. The two recently completed and three proposed fee coal exchanges were, however, undertaken at the behest of the private fee coal owner."

Whether exchanges are initiated by BLM or by a private fee coal owner is meaningless to the determination under NEPA as to whether BLM's coal exchange program is a major federal program affecting the human environment. Exchanges are, without any question, major federal actions. It is equally indisputable that BLM is implementing an agency-wide policy regarding such exchanges.

There is no reason to distinguish fee coal exchange policy from other coal management actions, such as adoption of coal leasing policy, which will be analyzed in the EIS Supplement. The argument here, that somehow it is unnecessary to analyze coal exchange policy because individual exchanges are proposed by private fee coal owners, is as disingenuous as would be the argument that there is no need to analyze coal leasing policy because no lease sales are held unless private companies file expressions of interest in a coal lease sale.

RESPONSE: The Department of the Interior has an active program through which it solicits nomination of tracts for coal leasing from the coal industry. It does not have an active fee coal exchange program and has no intent of establishing one.

COMMENT D-11: "D. The environmental impacts of proposed exchanges are studied under NEPA before any exchange is completed..."

This ignores a major point made by those requesting a programmatic look at BLM's exchange program, which is that BLM has no policy on when to do an EIS, and when merely an EA, on coal exchanges. Further, it ignores that fact that, to date, BLM has never prepared an EIS on a fee coal exchange. The statement is therefore misleading.

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It is, in any event, wholly irrelevant to the question of the need for a programmatic environmental review of the exchange program. To name just two issues deserving of programmatic review, BLM has yet to analyze what the impacts of the new policy are in terms of how much coal might be managed through exchanges, rather than through coal leasing, and it has adamantly refused to address these issues in any study of the impacts of individual exchanges (whether "under NEPA" or otherwise).

The whole point of the coal management program EIS prepared in 1979, and this supplement, is to address issues that cannot be adequately or most efficiently addressed in individual, action specific EIS's. BLM's coal exchange program certainly falls into this category.

RESPONSE: The general well known rule (which BLM follows) under the National Environmental Policy Act of 1969 is that an EIS is needed if a federal action would significantly affect the human environment. If no significant impact would result, only an environmental assessment (EA) is needed. The authorized officer, upon completion of an EA, must make a written finding of no significant impact, if an EIS is not to be completed. That finding must be made on the weight of the evidence on a case-by-case basis.

Coal is not managed through exchanges. The exchange of fee coal is a tool to reconfigure ownerships to increase the efficiency of managing a resource when a specific transaction is found to be in the public interest. No new policy is involved because being in the public interest is a criterion upon which every type of land exchange proposal is judged.

COMMENT D-12: "E...and the number of future fee coal exchanges is expected to be small."

The statement is absolutely unsupported and insupportable. There is no reason given by BLM, nor any reason known to us, for the stated belief that the number of future fee coal exchanges is expected to be small. In fact, the opposite appears to be the case. Judging from BLM's budgeting document cited above, the Bureau expects to be processing quite a few exchange proposals.

Moreover, all of the available evidence suggests a conclusion exactly contrary to the one BLM has come to here. There are tens of billions of tons of coal that have already been found acceptable for exchange consideration in land use planning in Montana alone. Private fee coal owners have proposed, successfully, several fee coal exchanges to consolidate coal holdings. BLM has approved such exchanges without any further explanation that consolidating the ownership patterns serves the public interest.

There is no requirement of the Federal Land Policy and Management Act, no requirement of either FLPMA or coal program regulations, no stated BLM policy, and no precedent set by any completed or considered exchange, which would in any way limit the number of exchanges submitted or considered.

In view of the ease with which consolidation exchanges have been completed (even compared to other exchanges or to competitive leases) in checkerboard coal areas, the huge amount of coal in checkerboard in areas covered by BLM land use plans expressly encouraging exchanges, and in view of the continued strong interest on the part of large fee coal owners (particularly land grant railroads) in pursuing such exchanges, the statement in the Decision Document is inexplicable and illogical.

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RESPONSE: The budgeting document forecast the processing of 41 fee coal exchanges between fiscal years 1982 and 1987. The document missed the mark by a wide margin. It was completed in an era when the impacts of the alluvial valley floor (AVF) fee coal exchange provisions of the Surface Mining Control and Reclamation Act and the provisions of Section 4 of the Act of October 30, 1978 (92 Stat. 2074) were relatively unknown. To date, two fee coal exchanges have been completed, and four other proposals are being processed. One of the four is an AVF proposal that is a mandatory exchange. Present estimates are that fee coal exchange proposals will rarely exceed two in most years, and in some years there may be none.

COMMENT D-13: The Decision Document also fails to respond to other arguments for a programmatic review of BLM's exchange program. First, such a review is necessary to analyze the relationship between the exchange program and the cooperative leasing proposal under consideration by the Department. This issue was raised in scoping on the EIS. BLM's exchange policy is, to put it simply, incompatible with cooperative leasing.

RESPONSE: Situations will arise in which cooperative leasing in checkerboard areas is more in the public interest than a fee coal exchange and vice versa. What is in the public interest can only be determined by the weight of the evidence on a case-by-case basis. The draft fee exchange policy (Appendix 9) would require full consideration of alternatives, including cooperative leasing, before a fee coal exchange can be completed.

COMMENT D-14: A programmatic review is also necessary because exchange regulations need to be developed, as suggested by members of the public as well as the Linowes Commission, the Office of Technology Assessment, and the General Accounting Office. Programmatic review would be appropriate in light of BLM's concurrent review of its coal land unsuitability criteria. Application of unsuitability criteria in fee coal exchanges is a controversial programmatic issue which needs to be addressed by BLM, as OTA pointed out specifically in its report.

RESPONSE: The draft rulemaking in Appendix 9 provides for a public meeting shortly after a fee coal exchange proposal is received at which comments on all aspects of the proposal would be received.

The draft policy in Appendix 9 would require the application of unsuitability criteria, exceptions, and exemptions as required by 43 CFR 3461 to both the federal and nonfederal lands in a fee coal exchange proposal. Such application is now required for the federal coal in an exchange by 43 CFR 2200.1 (d). An exception is necessarily made in the draft policy for coal to be acquired by the United States in an alluvial floor exchange.

COMMENT D-15: Cooperative Leasing

Appendix 6 contains a proposal to consider "cooperative leasing" in checkerboard and other mixed-ownership coal areas.

The Department endorses cooperative leasing as a method of enhancing competition at coal lease sales in checkerboard areas. The alleged benefits of cooperative leasing will be completely frustrated if the Department does not change its position on exchanges with common carrier railroads.

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The reason for this is quite simple. As logic dictates, and as the Department's draft request for comments on cooperative leasing confirms, common carrier railroads would be prohibited from bidding on coal leased in a cooperative lease sale.

Cooperative leasing, by definition, depends on the cooperation of the private coal owner of coal in mixed ownership. As noted already, the owners in almost every case will be railroads or railroad affiliates. If the private coal owner has the option of exchanging coal for federal coal to get a solid block, coal which could then be leased or developed by that private coal owner without federal assistance or approval, there would be no reason for the private coal owner to ever consider cooperative leasing with the Federal government. Therefore, as long as Interior considers exchanges with common carrier railroads to consolidate checkerboard holdings to be in the public interest, there will never be any substantial interest in cooperative leasing by the owners of private coal in mixed ownership areas.

RESPONSE: The cooperative leasing alternative will be fully considered in every fee coal exchange proposal. If the weight of the evidence shows the public interest would be better served through cooperative leasing than through exchange, the exchange will not be completed.

COMMENT D-16: Most of the criteria for determining whether an exchange is in the public interest have to do with consolidating mixed fee coal ownership. Despite the widespread assumptions that have been made, no discussion or analysis has been done showing why or how such consolidation is in the public interest. One of the questions that has not been asked or answered by the BLM is, why is exchange preferable as a management tool to cooperative leasing? Another question, given Congress' interest in checking the monopoly power of the railroads, is why wouldn't there be cases where it was in the public interest to leave coal in its existing checkerboard ownership pattern?

RESPONSE: Each completed exchange contains its own public interest determination based on the weight of the evidence at hand when the exchange is processed. Exchange is not likely to be preferable to other alternatives, such as cooperative leasing, in some situations but would be in others.

COMMENT D-17: Criterion #8 restates a requirement of FLPMA, that exchanges "meet the needs of state and local people," without providing obviously needed direction as to how those needs are to be defined and measured, and how the determination is to be made that an exchange would meet them.

RESPONSE: The Department of the Interior has considered general guidance on this issue on many occasions since the Federal Land Policy and Management Act was passed in 1976. In the end, the issue keeps coming back to the weight of the evidence developed for each individual case.

COMMENT D-18: Criterion #12, requiring compliance with NEPA, is intended to respond to OTA's recommendation that environmental considerations be reflected in this exchange policy. It fails to add anything of substance, however, since NEPA "purposes, policies, and goals" must obviously be met in any federal action. This criteria should give some indication of when an Environmental Impact Statement is necessary, and when an Environmental Analysis will suffice.

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RESPONSE: See response to comment D-11.

COMMENT D-19: In sum, the proposed draft is inadequate in both its form (regulations and a programmatic EIS are needed) and substance. BLM must address the public policy implications of exchanges with section 2(c) railroads in a comprehensive manner, and allow public comment. Until that is done, the proposed policy will be little more than a patchwork, after-the-fact rationalization of the exchanges already agreed to by BLM.

RESPONSE: The Department of the Interior is not conducting a fee coal exchange program, so a programmatic EIS is not needed for fee coal exchanges. Draft regulations for fee coal exchanges are included in Appendix 9. The Section 2(c) issue is the subject of litigation in the federal courts and will be discussed in that forum. The policy statement is being amended to meet some of the concerns expressed by the public and is included in draft form in Appendix 9.

COMMENT D-20: The Draft EIS does NOT address a major of concern of the Western Organization of Resource Councils (WORC) related to surface owner consultations and surface owner consent. We have supplied the BLM with comment on the issue of surface owner consultation and wish to resubmit for the record of this EIS our discussion of the issue and recommendations in the hope that the Bureau will respond in the final EIS.

On the subject of surface owner consultation, we were asked to suggest guidelines on "significant number of surface owners." The problem as we've experienced it has to do with a number of surface owners who have responded negatively to leasing on consultation forms, but whose consultations did not result in screening that area from further leasing consideration.

Additional concerns have been pointed out regarding BLM's methods in conducting consultation, and later in establishing their criteria for determining significant surface owner opposition.

RESPONSE: BLM is developing a handbook on applying the four coal screens (coal development potential, unsuitability criteria, multiple use trade-offs, and surface owner consultation) during land use planning. The handbook is intended to establish uniform, bureauwide procedures and guidelines for applying these screens. These comments will be considered in developing this handbook.

COMMENT D-21: To summarize, we think that the planning process has been abused due to BLM's failure to fairly apply the surface owner consultation screen; due to BLM's failure to determine whether a surface owner is qualified as soon as possible, and due to BLM's failure to acquire information about surface owner consents early on in the planning process. We hope that our recommendations are implemented to eliminate those problems.

RESPONSE: See response to comment D-20.

COMMENT D-22: The proposal for negotiated sales continues to appear in the Department's proposals for changing the Federal Coal Management Program. The Federal Register notice of October 26, 1984 appears in Appendix 6 of the DEIS

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at pp. 372 and 373. We wish to re-affirm our strong opposition to the three approaches discussed in this proposal. We believe that the Department could resolve any problems with "one bid" tracts administratively. We submit for the record of this DEIS our comments on the Department's three approaches.

RESPONSE: The Department of the Interior is analyzing the major issues associated with the negotiated sale of federal coal leases and is considering this position in the analysis.

The issues are complex, but the Commission on Fair Market Value Policy for Federal Coal Leasing recommended negotiated sales as a possible method to achieve a fairer price for the captive coal lease tracts sold (Linowes and others 1984). Since the Department has found this recommendation worth evaluation, an analysis has been conducted of the issue and comments, received on this proposal (see Appendix 6).

COMMENT D-23: At our meeting in Denver on July 24, 1984 the Department requested that we put forward our ideas concerning the use of expressions of interest, including our recommendations for requirements for companies wishing to file expressions and for the BLM to judge the seriousness of such expressions.

Again we have submitted these criticisms and suggestions to the Department, but have had no response and the DEIS fails to address these concerns. We resubmit them for the DEIS record and hope for a Departmental response in the Final EIS.

RESPONSE: Draft procedures for screening expressions of leasing interest (see Appendix 6) have been prepared and were released for public comment at the June 5, 1985, Powder River Regional Coal Team Meeting in Casper, Wyoming. The draft procedures were also given to the members of the Green River-Hams Fork Regional Coal Team at its June 13, 1985 meeting in Denver, Colorado.

The draft procedures are intended to serve two main purposes. First, they will be used to rate expressions individually for the degree of leasing interest. The rating of the quality of an expression in this manner will be valuable in the leasing level analysis stage of activity planning. Second, each parcel generally or specifically defined in an expression will be rated for its development potential. The rating of a parcel's near-term development potential will be of primary use in the tract delineation stage and will allow scarce fiscal resources to be focused on tracts that have the greatest potential for leasing.

The Department of the Interior examined other methods of screening expressions of leasing interest, including one that would have required a filing fee. In analyzing the alternative, it became clear that a fee system could become administratively complex. The amount to charge would be difficult to set. Too small a fee would not deter the filing of nuisance expressions, and larger fees might discriminate against cash-poor companies and otherwise discourage the submission of legitimate expressions of leasing interest.

After evaluating the fee system and other methods for screening expressions, the Department decided that a screening system in which expressions would be rated on the basis of several factors would provide a cost efficient and effective means of eliminating nuisance expressions. The draft screening

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procedures will help ensure that only serious companies submit expressions of interest because nonserious expressions will be winnowed out in the screening process. This winnowing process will be a disincentive for companies or individuals to submit poorly conceived and prepared expressions of leasing interest.

Revising the existing regulations to require greater specificity of data in expressions of leasing interest was also considered. But the Department decided that internal operating procedures for screening expressions would be as effective and less costly and time-consuming than regulation changes.

COMMENT D-24: (1) Adequate Information

Information requested in BLM's 1980 solicitation of expressions of interest (45 CFR 21718) provides a good starting point for receiving adequate information - but BLM must be serious about actually acquiring this information. If expressions of interest do not meet these minimum standards, then BLM should withdraw the expression of interest from any subsequent calculations of regional leasing levels. WORC and its member organizations recommend incorporating this and other recommended criteria in regulations. The following criteria are from the 1980 solicitation, with recommended changes in CAPITOL letters.

..."expressions of leasing interest should include the following data:

1. Quantity needs (total tonnage, average tons per year, and year during which production would commence) for both coal producers and users.
2. Quality needs (types and grades of coal) for both producers and users.
3. Location
 - a. Tracts desired by mining companies (narrative description with a diagram on a surface minerals management map which is available for purchase from the BLM state offices) IN DETAIL.
 - b. Public and private industry user facilities in the region AND COPIES OF ALL CONTACTS WITH FACILITIES.
 - c. DELETE THIS SUBSECTION.
4. Type of mine.
 - a. Surface, or underground.
 - b. Technique of mining (i.e., longwall, room and pillar, dragline, IN SITU UNDERGROUND COAL GASIFICATION, etc..).
5. Proposed users of the coal, WITH COPIES OF CONTACT WITH ALL POTENTIAL USERS OF COAL INDICATING DEGREE OF POTENTIAL USE.
 - a. By mining companies.
 - b. By public and private industries.

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6. Where coal would be consumed, INCLUDING COPIES OF ALL CONTACTS WITH POTENTIAL COAL CONSUMERS, (include extra-regional markets, plant output, and location.)

- a. Within the Powder River Coal Region
 - (1) Electric Power Plant.
 - (2) Synfuels Plant.
 - (3) Other (specify).
- b. Outside the Powder River Coal Region.
 - (1) Electric Power Plant.
 - (2) Synfuels Plant.
 - (3) Other (specify).

7. Transportation needs (i.e., railroads, pipelines, etc..) AND COPIES OF CONTACT WITH POTENTIAL COAL TRANSPORTERS.

- a. Existing facilities.
- b. Contingency or other sources.

8. Information relating to mineral ownership INCLUDING COPIES OF CONTACT WITH ALL POTENTIALLY AFFECTED MINERAL OWNERS.

- a. Information of surface owner consents previously granted (e.g. a description of the location of the property, whether consents are POST 1977 and transferable, etc..).
- b. Commitments from fee coal owners or commitments for associated nonfederal coal.
- c. SURFACE OWNER CONSENTS FOR ALL LANDS COVERED BY THE EXPRESSION OF INTEREST AND FOR LANDS WITHOUT CONSENTS THE OWNER OF THE SURFACE.

RESPONSE:

See response to comment D-23.

COMMENT D-25: (2) Financial Commitment to File Expression of Interest

The simplest method to determine serious intent in a tract or area is to have companies make a financial commitment to prove the seriousness. Oil and gas leasing requires a financial commitment, there is no reason to let coal leasing operate in a substantially different manner. There should be a fee of \$3/acre or some equivalent in cents per ton in order to enter an expression of interest. A percentage of the fee could be reimbursed if the participant bids within 20% of the final lease price.

This method will help insure that only serious companies submit expressions of interest. The expressions can then be used as a realistic planning tool in tract selection.

RESPONSE: See response to comment D-23.

COMMENT D-26: (3) Reassessment of Expressions of Interest

In the proposed 1984 Powder River Basin lease sale, tracts have been proposed that have no expressed competitive interest. Obsolete expressions of interest (submitted for the 1982 lease sale) have been maintained and used to select tracts for leasing. Since the coal market is obviously very soft, this course of action is seriously flawed. Frequent reassessment of the expressions of interest are important in delineating tracts with true competitive interest. Companies should renew them before bidding and before any new lease sale.

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RESPONSE: Procedures for screening expressions of leasing interest have been developed and given to the Powder River Regional Coal Team (RCT). These procedures, when issued final, will be used to screen and rate all expressions of leasing interest for a second round of coal leasing in the Powder River Region. Tracts nominated by industry will not be considered by the RCT for study in the regional EIS until each expression of leasing interest has been carefully examined and rated for its use in the leasing level and tract delineation stage. Also, see our response to comment D-23.

COMMENT D-27:

COMPETITIVE LEASING AMENDMENTS Federal Register Notice, November 5, 1984 (p. 358 DEIS)

WORC strongly opposes two of the proposed changes in the Federal Coal Management Program noticed in the Federal Register on November 5, 1985 and printed in Appendix 6 of the DEIS at page 358. We submit the following comments on these proposed changes:

We believe that, with respect to at least one of the proposed changes, -- the dropping of the \$100 per acre minimum bid -- two factual allegations contained within the "Supplementary Information" of this rulemaking are manifestly in error and that promulgation of a rule changing the minimum bid system based upon this information would be arbitrary, capricious, an abuse of discretion and not in accordance with law.

The erroneous statements are the following:

"Minimum bids are not designed to reflect the Department of Interior's estimate of fair market value for the tracts being offered for lease or to affect the number of legitimate bids for these tracts." (49 Fed. Reg. 44222).

"The changes that would be made by this proposed rulemaking should not affect the number of serious bids or the amount of coal leasing revenue received and distributed to the States, the Land and Water Reclamation Fund or the general revenues." (49 Fed. Reg. 44223).

RESPONSE:

The cited statements refer to the purpose of the minimum bid. In the preamble to the final coal rulemaking on July 19, 1979, several objectives were discussed for minimum bids: to eliminate nuisance bidding, to establish a floor below which federal coal would not be leased, and to establish eligibility for review by the sale panel (44 Federal Register 42593). The same preamble noted that the minimum bid did not necessarily represent fair market value. The July 1982 regulatory revisions, which changed the minimum bid amount from \$25 to \$100 per acre, did not change the objectives that minimum bids would accomplish.

The Department of the Interior is studying the objectives that minimum bids might serve. No regulatory changes to minimum bids will be adopted without an analysis of the issues and the comments received. See Appendix 6 for an assessment of comments received on the minimum bid proposal cited by the comments.

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COMMENT D-28:

LEASE BY APPLICATION PROPOSAL (Pp. 395-396 DEIS)

While we do not endorse the concept of "lease by application" as an overall method of leasing for the Federal Coal Management Program, its appropriateness in certain coal regions should be explored. One of the main questions raised in a program of leasing by application is what is the role of the Regional Coal Team (RCT) in a region where this concept could be adopted?

We make the following suggestions for the continuation of the RCT's in such circumstances:

*When regional coal lease sales are unjustified, the inactive RCT shall oversee the BLM implementation of 43 CRF 3425, 3430, 3431, 3435, and 3436. In carrying out its duties, the RCT shall:

- review data, land-use plans, and environmental studies for data adequacy and completeness,
- identify where conflicts occur, and determine how conflicts can be ameliorated,
- participate in consultation and public hearings,
- submit recommendations to the BLM, and
- have the responsibility to fulfill the duties and requirements of subsections i-m of Section 6 of the RCT Charter.

In addition we would recommend that:

*If BLM receives two or more lease applications within any 12 month period, the BLM State Director shall notify the inactive RCT for that region. The RCT shall:

- hold a meeting to determine whether reactivation of the team for the purpose of holding a regional coal lease sale is appropriate and justified, and
- report their recommendations to the Secretary.

RESPONSE: Although no market analyses would be conducted under Leasing by Application, regional coal teams could be retained as a vehicle for consultation with the state and affected federal agencies before lease sale decisions.

Form 1279-3
(June 1984)

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ABBREVIATIONS

The following abbreviations are frequently used in this supplemental EIS. For the definition of terms, see the Glossary at the end of Volume 2.

ACHP: Advisory Council on Historic Preservation
ACQR: air quality control region
AEO: Annual Energy Outlook
AUM: animal unit month
AVF: alluvial valley floor

BLM: U.S. Department of the Interior, Bureau of Land Management

CEQ: Council on Environmental Quality
CFR: Code of Federal Regulations

DOE: U.S. Department of Energy
DOE/EIA: U.S. Department of Energy, Energy Information Administration
D&RGW: Denver and Rio Grande Western

EA: environmental assessment
EIS: environmental impact statement
EPA: U.S. Environmental Protection Agency

FCLAA: Federal Coal Leasing Amendments Act of 1976
FLPMA: Federal Land Policy and Management Act of 1976
FR: Federal Register
FS: U.S. Department of Agriculture, Forest Service
FSCAB: Federal-State Coal Advisory Board
FWS: U.S. Department of the Interior, Fish and Wildlife Service

GAO: U.S. Government Accounting Office

LRR: land resource region

MLA: Mineral Leasing Act of 1920
MLRA: major land resource area
MMS: U.S. Department of the Interior, Minerals Management Service

NAAQS: National Ambient Air Quality Standards
NCM: National Coal Model
NEPA: National Environmental Policy Act
1979 FES: Final Environmental Statement--Federal Coal Management Program

OSM: U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement
OTA: U.S. Congress, Office of Technology Assessment

PRLA: preference right lease application
PSD: Prevention of Significant Deterioration

RCT: regional coal team

SHPO: State Historic Preservation Officer
SMCRA: Surface Mining Control and Reclamation Act

TDS: total dissolved solids
TSP: total suspended particulates

USDI: U.S. Department of the Interior
USGS: U.S. Department of the Interior, Geological Survey

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